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Original Articles.**CASES OF ABDOMINAL SURGERY OCCURRING IN THE PRACTICE OF DR. J. COLLINS WARREN AT THE MASSACHUSETTS GENERAL HOSPITAL DURING THE WINTER OF 1893.**

REPORTED BY CHARLES L. SOUDDER, M.D.

THE following cases are reported in order to show the miscellaneous character of abdominal cases which come to a general hospital for treatment, and in order to illustrate the general method of dealing with cases of this class.

CASE I. Solid tumor of the ovary; laparotomy; recovery.

A domestic, single, forty-three years of age, entered the hospital November 2, 1892. For the last twelve years she has suffered from epileptic seizures, which she describes as "giving warning," and affecting the right side mainly. Her general health has otherwise been good. The catamenia have been regular, but ceased two months ago. She noticed some soreness of the abdomen upon bending over about two months ago, and not until that time did she notice any enlargement. She has had no pain, but has experienced a feeling of weight and dragging when walking about. The patient is poorly nourished, and there is a slight suggestion of cancerous cachexia. On examination, the abdomen was found to be somewhat distended with ascitic fluid, and a large, very hard and nodular tumor was felt, extending three inches above the umbilicus and down to the pubes. It was quite movable, and could be easily pushed from side to side of the abdomen. On vaginal examination, the uterus was found small, movable and not connected with the growth. The lungs and kidneys were normal. The tumor was regarded as probably malignant, and attached to the omentum. It was thought advisable to perform an exploratory operation.

An incision, four inches in length, was made below the umbilicus, which disclosed a hard, nodular mass of a whitish color floating in ascitic fluid. The incision was enlarged to two inches above the umbilicus, and the tumor was delivered, and found to be attached to the left broad ligament. The pedicle was long and thin, and easily tied with a Staffordshire knot. The tumor, on removal, was found to be about the size of a child's head, and to weigh eight and one-half pounds.

Examination of the other ovary showed it to be about twice its normal size, hard and nodular, resembling somewhat in this respect the diseased ovary.

Patient made a good recovery, temperature not rising above 100° F., although the evening of the operation she sat up in bed, and had several epileptic seizures during her convalescence. The stitches were removed on the thirteenth day, union being perfect. The catamenia appeared on November 28th, immediately after one of the seizures.

She was discharged from the hospital four weeks and four days after the operation.

The following is the report of the microscopical examination of the tumor by Dr. W. F. Whitney: "A large globular growth, the size of the head, firm, not covered by peritoneum, and united to a fragment of the Fallopian tube. Microscopic examination showed it to be made up of fibrous tissue, with here and there a few bundles of unstriped muscular fibre. Fibro-myoma. There were no cysts in any part of the tumor."

CASE II. Cyst of the ovary; laparotomy; recovery.

Age forty, unmarried. Catamenia regular, painless. For four years the abdomen has been enlarging. There has been constant pain in the right side. Upon examination, a symmetrical abdominal tumor was found, which was dull on percussion and not tender. Vaginal examination found the uterus drawn well up.

Operation, by a median abdominal incision, disclosed a cyst of the right ovary. There were no adhesions present, and the cyst was easily delivered, and its pedicle clamped and tied with a Staffordshire knot. A small cyst was found upon the left ovary about the size of a small cherry, which was touched with the actual cautery; the left ovary, however, was not removed. The abdominal wound was closed without drainage.

The patient made a good recovery.

Dr. W. F. Whitney's microscopical diagnosis was a multilocular cysto-adenoma.

CASE III. Salpingitis, circumscribed serous peritonitis; laparotomy; recovery.

A woman thirty-two years old, married. Fairly well developed and nourished. Rather anæmic, with a feeble pulse. Catamenia irregular and excessive. Miscarriage five years previous to the operation. Patient has had pain in the left iliac region for a year and a half, which has been continuous, and during the past two months accompanied by vomiting and fever.

Examination discovers a marked fulness in the left iliac region. Dulness and tenderness exist over this area of fulness. Vaginal examination finds the cervix drawn up and fixed under the symphysis pubis, the vaginal vault hard and firm everywhere, the uterus not differentiated; no fluctuation made out.

Operation by a median abdominal incision in the Trendelenberg position.

The tumor was found adherent to the anterior abdominal wall for about six inches. Upon freeing the tumor, the left iliac fossa was found to contain a thin-walled cyst, which was easily ruptured, giving escape to one pint of thin, serous fluid. Below and behind this cyst was a tumor the size of the fist, adherent to the uterus and posteriorly to the sacrum. Several large glands were felt at the sacral promontory. This deeper tumor was aspirated, and eight ounces of creamy pus evacuated. The sac of the tumor was opened; its interior thoroughly cleansed and drained by glass drainage surrounded by gauze. Incision partially closed. Recovery uneventful.

CASE IV. Congenital hernia of the liver; reduction of the hernia; recovery.

The paternal grandparents, as well as the father of the little patient, are living and in good health. The mother is well, but not robust. Her mother is living, but her father died of consumption. The mother of the patient was married five years ago. Her first child was born three years ago, but died at the age of four months of cholera infantum. It had no deformity, and was in previous good health.

The second child was born November 14, 1892. Labor began at 6 P. M. of the 18th, and was completed at 10 A. M., and was normal in every respect. Dr. G. W. Nickerson, of Stoneham, Mass., who was her physician, states that he was surprised to see, after birth of the head and shoulders, a tense, bladder-like tumor come popping out, after which followed the lower extremities. He states: "I was puzzled at first to make out what it was, but, seeing that it was covered by an expansion of the umbilical cord, concluded that

it must be a hernia." The child was sent that afternoon to the hospital, and was operated upon by me the next morning, when it was about twenty-four hours old. On inspection, the child was otherwise well formed, but thin and with a somewhat wrinkled face. It did not look strong. At the umbilicus was seen the cord, which was greatly distended at its point of insertion into the abdomen, forming a tumor about six and one-half centimetres in diameter. The coverings of the cord were inserted into a raised rim of skin, and were opaque, so that the contents of the hernia could not be determined (Fig. 1).

There was also a moderate-sized right inguinal hernia.



FIG. 1.

The child was etherized, and a hasty attempt having been made to render the field of operation aseptic, the sac was opened, and was found to contain the liver, which seemed to be situated wholly external to the abdominal cavity. It was with some difficulty that the myxomatous tissue of the cord was separated from the surface of the liver, as it appeared to be adherent in several places. The umbilical vein and the two hypogastric arteries having been tied and cut, the cord was removed. The umbilical ring was slightly enlarged by an incision, and, with some manipulation, the liver was finally pushed through the opening into the abdominal cavity. A small amount of ascitic fluid escaped when the sac was first opened. The separation of adhesions from the liver caused a slight hemorrhage, which was checked by pressure. The wound was brought together by four or five strong silk stitches. The infant suffered somewhat from shock. There was, however, no sign of peritonitis after the

operation, and it took its nourishment well during convalescence. The food consisted of a mixture of cream and water.

The stitches ulcerated somewhat, and were removed during the first week, in consequence of which the edges of the wound separated at one point, and the liver could be seen. The edges were, however, approximated by *crêpe d'isse* and collodion, and the wound had healed at the end of two weeks, when the baby was taken home to be nursed by its mother.

The child has done well since, and at the time the second photograph was taken it was about four months old (Fig. 2).

There is no umbilical hernia at present — one year



FIG. 2.

after the operation. The child was a sufferer from eczema, but now enjoys excellent health, and has developed rapidly.

CASE V. Ruptured cyst of the broad ligament; contents evacuated; treated openly; recovery.

A woman was admitted to the medical side of the hospital in 1889 with tubercular peritonitis. Her general health had improved since her former visit to the hospital, and ten days ago she complained of pain in the left side of the abdomen. At no time has there been any vomiting, and a normal movement of the bowels resulted after the use of salts. The abdomen was slightly distended; and in the left lumbar and iliac regions was a tumor the size of two fists, over which there was dulness and slight sensitiveness. The uterus by vaginal examination was low down, the posterior and left lateral cul-de-sacs being filled by a soft mass which seemed to surround the cervix which moved with the tumor. The urine was normal.

Operation.—The Trendelenberg position. A median abdominal incision. Some ascites present. The intestine and omentum were found adherent to a ruptured, thin-walled cyst having its origin in the left broad ligament. The cyst was further opened and its interior rendered dry. It being impossible to enucleate the cyst, it was left *in situ*, being sutured to the abdominal wall. In the left lateral cul-de-sac was found a second smaller cyst, which was likewise ruptured and drained by means of a glass drainage-tube.

The patient made a good recovery and was discharged from the hospital about three weeks after the operation, a small sinus remaining.

CASE VI. Abscess following appendicitis; operation on the fourth day; recovery.

A man who had always been well was attacked suddenly after breakfast by pain in the right iliac fossa. Through that day there was some nausea. Two days later there was a slight rise of temperature, and vomiting was present. Four days later the temperature rose to 101.4°, the pulse to 140. A tumor presented in the right iliac fossa, a half inch below McBurney's point, about the size of a lemon; dull on percussion and sensitive.

Operation.—An incision parallel to Poupart's ligament opened a circumscribed abscess cavity, in which was found the appendix twisted under the cæcum. This was removed, the abscess cavity thoroughly cleansed with boiled water, a rubber drainage-tube surrounded by iodoform gauze placed in the abscess cavity, and the wound partly closed.

The patient made a good recovery. Two months after the operation there was a slight tendency to hernia at the seat of the operation. The patient had gained ten pounds in weight and complained of no pain or any other trouble.

CASE VII. Abscess following appendicitis; operation on the seventh day; removal of appendix; recovery.

A man who had had each year for several years two or three attacks of vomiting attended by slight constipation, and who had never had with any of these attacks pain, was suddenly seized with pain in the right iliac fossa. The temperature rose to 99.5°. There was some vomiting. There was a movement of the bowels after calomel and a rectal enema. The temperature rose to 103.2°, the pulse to 120 upon the fifth day. Upon entering the hospital on the seventh day of the disease, it was stated that from the sixth day vomiting was constant. The abdomen was not distended, but the abdominal muscles were rigid. The most tender point upon the abdomen was one and a half inches above the anterior superior spine, but there was general tenderness through the whole right loin. A slight bulging was detected upon rectal examination upon the right side.

Operation.—An incision parallel to Poupart's ligament found the subperitoneal tissues not oedematous. A circumscribed abscess cavity was opened, the appendix found and removed, the cavity irrigated with boiled water, and two tubes for drainage (surrounded by iodoform gauze) were inserted.

The patient made a good recovery. Six weeks after the operation he was reported as in excellent condition.

CASE VIII. Appendicitis; operation; recovery.

This patient was a boy who was sent to the hospital with a history of several days' illness, all the symptoms of which pointed to an appendicitis. Although

the patient presented slight dulness on percussion in the region of the right iliac fossa, there was no well-marked cake. He was seen repeatedly by the surgeons of the hospital in consultation. All the symptoms present led to a delay of the operation, and it was supposed up to the fourth day of his presence in the hospital that he would recover without operation, but upon this day there was a sudden rise of temperature and operation was decided upon. The usual incision parallel to Poupart's ligament was made. Oedematous tissue was seen before opening the peritoneum. The appendix was found under the inferior edge of the cæcum, perforated at its middle and lying in a very small abscess cavity, which contained beside purulent and faecal material, a concretion. The omentum and mesentery near by were gangrenous. The appendix was ligated one-third of an inch from the cæcum and removed. The abscess cavity, being circumscribed, was thoroughly irrigated with boiled water. It was found that the pus lay between coils of intestine some distance from what appeared to be the only abscess cavity. A large tube was placed in the bottom of the abscess cavity and two smaller tubes extending in opposite directions, all the tubes being surrounded by iodoform gauze.

Six weeks from the operation the boy was discharged well.

These three cases were the only cases of appendicitis occurring during a winter service. It is perhaps worth mentioning that in the spring service of a similar length, Dr. Beach had under his immediate care a large number of cases of appendicitis. This fact raises the question of the possibility of the period of the year being a factor in the etiology of this disease.

CASE IX. Double tubercular salpingitis and peritonitis; laparotomy; relieved.

A woman who had had pleurisy one year previous to her entrance into the hospital gave a history of profuse flowing for two months. She presented upon examination a resistant mass in the region of the right tube. The uterus was in fairly good position and movable. The cervix was slightly lacerated and hyperplastic. Posteriorly to the uterus was a mass the size of the closed fist. This corresponded with the mass felt upon external examination. The urine was 1,013, acid, high in color, contained a trace of albumen, some red blood cells and a few epithelial cells.

Operation.—Trendelenberg position. An incision four inches long in the median line. Some ascites present. The uterus was very large. The broad ligaments and tubes were found studded with military tubercles. The tubes themselves were enlarged and thickened. Upon the left side there were no adhesions and the tube was removed without difficulty. Upon the right side the tube was the size of a fist, and was adherent to the bowel above. Upon separating these adhesions both tube and ovary were removed. A small amount of puriform fluid escaped into the abdominal cavity upon the removal of the tube. The abdomen was thoroughly flushed with boiled water, dried and drained by a glass drainage-tube in the posterior cul-de-sac. The abdominal wound was closed, leaving the glass tube projecting at the lower end of the incision. This patient made a long and slow recovery, having a hectic temperature and some stomatitis. By careful nursing, and upon warm days by being taken into the open air, she eventually recovered so as to leave the hospital in a fairly good condition.

tion, feeling that she had been improved by the operation, her stay in the hospital having been some three months.

It seems that in a great many cases the careful nursing and the out-of-door exposure contributes much to the recovery of these cases.

CASE X. Probable carcinoma uteri; rupture into the abdominal cavity; laparotomy; drainage; death from shock.

A woman, married, having three children, had passed the climacteric three years ago. She had a foul leucorrhœa, and at times a bloody serous discharge from the vagina. She suffered from pain over the pubes and difficult micturition. Upon examination, the uterine canal measured five inches. A small greenish-brown mass was found projecting from the cervix. This was removed some six months previous to the present entry into the hospital, since which removal she has grown weak, has lost flesh, and has occasional chills accompanied by nausea. Her feet and hands were cold, and she presented a general cachectic appearance. The pulse was 112. The temperature at night ranged from 100° to 101°. The uterus was curetted and thoroughly cleansed with corrosive sublimate.

Finding the patient was losing ground, it was decided to do a median abdominal section in order to determine the extent of the disease, and if possible to remove it. Accordingly, in the Trendelenberg position, the operation was done. The omentum was found adherent to the bladder, and the intestines adherent to the fundus of the uterus. On breaking up these adhesions, a cavity containing six ounces of pus was opened a little to the left of the fundus which communicated directly with the cavity of the uterus. The bottom of this cavity was filled with greenish sloughing tissue. The cavity was irrigated and packed with iodoform gauze. A suprapubic glass drainage-tube was placed in position. A strip of gauze was passed through the cervix to secure more thorough drainage.

The patient died of shock some hours after the operation.

CASE XI. Double ovarian cyst; laparotomy; recovery.

A woman thirty-six years old, always well, had been married for fourteen years. She has had no children. The catamenia have always been regular and painless. An enlargement of the abdomen was first noticed seven years ago. Never at any time has there been pain. Her general health has been good.

Physical examination showed general abdominal enlargement. No enlarged veins were seen upon the abdominal wall. Circumference of abdomen at the umbilicus was forty-five inches. Vaginal examination found the cervix high and crowded forward. A hard and resistant mass was felt in the posterior cul-de-sac.

Operation.—A median abdominal incision. The omentum was found adherent to the anterior abdominal wall. A pearly-white cyst wall presented, was aspirated, discharging a coffee-colored fluid. The weight of the fluid was twenty-eight pounds. The cyst, after the evacuation of the fluid, was found to originate from the right ovary. The tumor was removed by Staffordshire knot and cauterization. No drainage.

Eight days after the operation phlegmasia alba dolens of the left leg appeared. One month later the swelling had entirely disappeared from the left leg and she was discharged from the hospital, seven weeks after the operation.

Pathological report by Dr. W. F. Whitney: "Multilocular cystoma, to which a small piece of the ovary was attached."

Remarks.—The phlebitis which occurred in this case did not have any apparent septic origin. The patient was kept still in bed for the time mentioned above, in order to avoid the danger of embolism, which occasionally occurs with such inflammatory disturbances.

CASE XII. Intra-ligamentous ovarian cyst; laparotomy; recovery.

Two months ago a woman first noticed an enlargement in the lower abdomen, extending over to the left side. This tumor gradually and painlessly increased in size. The tumor was dull upon percussion, and fluctuating. The vaginal examination found the uterus pushed backward and to the right.

Operation by median abdominal incision discovered a cyst in the broad ligament containing about a quart of brown fluid. The intestines were adherent posteriorly. After freeing these adhesions, an attempt was made to enucleate the sac of the cyst, which proved futile on account of the dense adhesions to the sacrum posteriorly. The right ovary was removed. The cyst sac was stitched to the anterior abdominal wall, drained by glass drainage and gauze. A sinus formed, and was packed with iodoform gauze, gradually closing without untoward symptoms. The patient was discharged from the hospital with a very small sinus properly healing.

CASE XIII. Ovarian cysto-adenoma; laparotomy; recovery.

A woman of good family history and good previous personal history one year ago noticed an enlargement of the abdomen, which during the past two months had rapidly but painlessly increased. During the past six weeks there had been considerable flowing. The patient was well developed and well nourished, and the examination disclosed a swelling of the abdomen extending above the umbilicus, dull upon percussion, fluctuating and not tender. Vaginal examination found the uterus immovable and small. The posterior cul-de-sac was distended with an obscurely fluctuating mass, which was not tender. The os was rather soft and patulous.

Operation by median incision found a glistening cyst wall, which contained a chocolate-colored fluid, nine quarts by measure. Small cysts were found anteriorly attached to the anterior wall of the larger cyst. The tumor rose from the right ovary, which, with the cyst wall, was removed by clamp and canter. The left ovary was found enlarged and moderately cystic, and was not disturbed. The uterus was heavy and ante-flexed. The wound was closed in the usual fashion by interrupted sutures without drainage.

Pathological report by Dr. W. F. Whitney: "A large cyst, smooth-walled, with but few adhesions, to which a very much elongated Fallopian tube was attached. The fluid was ropy, dark reddish in color, specific gravity 1.026, and contained abundant blood-corpuscles, and also enlarged epithelial cells (many with numerous granules). Diagnosis, cysto-adenoma of the ovary."

(To be continued.)

THE Richmond City Hospital has been purchased by the College of Physicians and Surgeons of that city for \$18,489.39.

THE PREVENTION OF TUBERCULOSIS.¹

BY HERMAN F. VICKERY, M.D.,

Physician to Out-Patients, Massachusetts General Hospital; Instructor in Clinical Medicine, Harvard University.

THE official statistics of the State of Massachusetts for the five years, 1886-1890, set the total number of deaths from typhoid fever for that period at 4,391; from diphtheria and croup, at 8,855; from pneumonia, at 17,378; and from phthisis, at 28,868. With regard to relative fatality, diphtheria held the sixth rank in 1881, but in 1890 the eleventh. Likewise typhoid fever, which was fourth in bad pre-eminence twenty years before, was surpassed in 1890 by no less than fifteen rivals. The encouraging results which have thus attended efforts at purification and isolation in these two infectious diseases reflect credit upon the medical profession, and they stimulate the expectation that similar efforts with regard to another infectious and contagious disease will prove equally advantageous. As yet no advance seems to have been made. Phthisis remains the most deadly of all diseases. In the number of victims it claims, it was the first in 1881; and in 1890 it remained still the first. There had, indeed, been some improvement, taking the State as a whole; for in 1890, the ratio of deaths from phthisis to the total mortality was 13.30 per cent., the least of any year recorded up to that time, while in 1881, the ratio was 16.14 per cent. But Suffolk County showed no such change, its ratios being 16.39 per cent. in 1881, and 15.59 per cent. in 1890.

Lawrence F. Flick² finds that Philadelphia has been more fortunate. From 1881 to 1891 the percentage of the whole mortality in the city due to phthisis sank from 14 down to 11. Hence it will hardly be proper for us to try wholly to explain the slow improvement in Boston by a reference to the overcrowding and foreign immigration which are presumably common to both cities.

"Theoretically, with our present knowledge," says Dr. Baker, Secretary of the Michigan State Board of Health, "consumption, which still is the most important cause of mortality, is now, next to small-pox, one of the most easily preventable diseases. The next quarter of a century should see it lessen in importance as a cause of deaths, until it takes its place alongside small-pox."³

In the five years 1886-1890, while the above-mentioned 28,868 persons died of phthisis in Massachusetts, small-pox killed 19.

It is the object of this paper briefly to review the etiology of phthisis, and to contribute in some degree to a more general and united effort on the part of our Society in the prevention of the disease.

With regard to its causation, it is not improbable that Koch's demonstration in 1882 of the power of pure cultures of tubercle bacilli to cause tuberculosis diverted the attention of the profession for a time too far from the important factor of hereditary and acquired predisposition to the disease. Even weeds must have soil to grow in. This constitutional side of the question has been newly asserted by Aviragnet,⁴ Koster,⁵ and Wolff;⁶ while Gärtner⁷ believes that the results

of his experiments justify him in asserting that the disease itself is hereditary, that human mothers may directly give a fetus tubercle bacilli.

We cannot forget the influence of climate on the development of the disease, powerful for good or ill. Solly's experience is impressive.

"In Colorado,"⁸ he says, "to which my personal observations upon the influence of the altitude have been mostly confined, the native population is too small and youthful to gather any statistics; but living as I have done for the past sixteen years among a people of whom perhaps thirty per cent. came to the country with tuberculosis, and not a few of whom live under unhygienic conditions in crowded lodgings, and where free expectoration is carelessly practised, I know of only four cases of phthisis which could be fairly assumed to have originated in Colorado."

Granting, however, the influence of both climate and personal constitution upon the production of the disease, the bacillus tuberculosis is an essential factor; and probably no one doubts that its complete destruction would exterminate tuberculosis.

The ways in which the bacillus enters the human body are fairly well agreed upon. The raw⁹ milk of tuberculous cows may occasionally convey it into the stomach,¹⁰ but not very often.¹¹ The flesh of tuberculous animals if inspected (Jeffries, Nocard) is not very dangerous.¹² The tuberculous discharges of animals or human beings may infect others by direct inoculation into wounds or by contact with mucous membranes (dissection-wounds, coitus).¹³

The main source of danger, however, lies in tuberculous sputa or in the pus of scrofulous sores. The latter might conceivably be indirectly conveyed into the system because of lack of cleanliness. Sputum likewise may be deposited on the lips, hands, clothing and utensils of patients and thence carried to some healthy person; or the act of coughing may directly spray it into the mouth of a bystander. Any tuberculous material if thoroughly dried may be inhaled in the form of dust. This last is probably by far the most frequent way in which the infection is distributed. The number of bacilli in the sputa is enormous,¹⁴ and as Cornet and others have shown, even the walls of the room where a consumptive lives may become sources of infection.

The way, therefore, to prevent the spread of tuberculosis is evident enough; and it has been repeatedly enunciated by medical men.¹⁵ Behrens, for example, sums the matter up as follows: (1) the public should be enlightened; (2) sputum in public places should be minimized or rendered innocuous; (3) the streets should not be allowed to be dusty; (4) clothing, etc., and houses should be disinfected; (5) there should be public hospitals for the tuberculous; (6) tuberculous patients should not pursue vocations in which they might endanger others; (7) tuberculosis in cattle should be under governmental inspection and control. A corollary to these regulations is the compulsory report of cases of tuberculosis to the boards of health,

¹ Hare's Therapeutics, 1, 424.² Nocard: Ann. d'Hygiene, xxviii, 5, 1892.³ Ernst: Œuvre sur la Tubercule, 1890.⁴ Jeffries: Boston Medical and Surgical Journal, cxxv, 10, 1891.⁵ Philadelphia Medical News, April 1, 1893.⁶ Gärtner: supra cit.⁷ Nuttall: Ztschr. f. klin. Med., xxi, 3 and 4, 1892.⁸ Behrens: Hilderheim, 1891.⁹ Flick: Philadelphia Medical News, lxiii, 17, 1893.¹⁰ Porteous: Boston Medical and Surgical Journal, cxxix, 19, 1893.¹¹ Rochester: Philadelphia Medical News, September 2, 1893.¹² Baker: Hare's System of Therapeutics, 1, 510.¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, November 15, 1893.² Philadelphia Medical News, May 14, 1892.³ Hare's System of Therapeutics, 1, 572, 1891.⁴ Gaz. Hebdom., xxxix, 36, 1892.⁵ Inaug. Thesis, Leyden, 1893.⁶ Münch. Med. Woch., xxxix, 39.⁷ Zeitschr. f. Hygien. u. Infectiouskr., xlii, 3, 1893.

just as in diphtheria or small-pox. Flick adds that interstate and international migration of consumptives should be restricted and regulated.

If all, or even the most important of these suggestions were persistently carried out, there can be no doubt that tuberculosis would be vastly less frequent than it now is. The benefit would be an increasing one, for many individuals who to-day are apparently well really carry in their bodies the seeds of tuberculosis, ready to germinate whenever the constitution becomes from any cause undermined. Pizzini¹⁶ and Spengler¹⁷ have recently shown how often the lymphatic glands — particularly the bronchial — contain tubercular bacilli in persons who have shown no symptoms of tuberculosis. This is in accord with the opinion expressed by Volland of Davos (Hamburg, 1891) that for adults the chief means of avoiding tuberculosis lies in care of the constitution.

In the long run, however, general, persevering, hygienic efforts must overcome this deadliest of diseases.

In concluding, I seek justification for rehearsing facts which are already so familiar to the members of this Society, in the apparent lack among us of systematic and united effort along the lines indicated. With few if any exceptions, we have doubtless all of us for years given advice to the victims of tuberculosis and their friends with a view to lessen the dangers of contagion; but why should not we as a Society engage more earnestly in this good work? Pennsylvania has a Society for the Prevention of Tuberculosis. "The society is formed for the purpose of preventing tuberculosis (consumption): (1) by promulgating the doctrine of the contagiousness of the disease; (2) by instructing the public in practical methods of avoidance and prevention; (3) by visiting the consumptive poor and supplying them with the necessary materials with which to protect themselves against the disease, and instructing them in their use; (4) by furnishing the consumptive poor with hospital treatment; (5) by co-operating with boards of health in such measures as they may adopt for the prevention of the disease; (6) by advocating the enactment of appropriate laws for the prevention of the disease; (7) by such other methods as the society may from time to time adopt."

This society is a noble one and I am proud to be a member of it. Yet with us here, it seems as if any increase in the number of societies were to be deprecated, and that our present society by exercising its proper functions might do beneficent work in this very line. Matters that suggest themselves as needing first to be done are:

(1) The drawing up, by a committee, of a tract suitable to leave in families where tuberculosis has entered. Properly worded, such a leaflet would add nothing to the sufferings of the sick, while it might be beneficial to them (hygiene, re-infection) and of priceless value to their friends.

(2) Co-operation with the Board of Health in appropriate measures.

(3) Agitation for the establishment of a public hospital for the consumptive poor.

LANDOUZY has been made Professor of Clinical Medicine and Therapeutics at Paris in succession to Hayem.

¹⁶ *Zeitschr. f. klin. Med.*, xxi, 3 and 4, 1892.

¹⁷ *Zeitschr. f. Hygien. u. Infectiouskr.*, xlii, 3, 1893.

Clinical Department.

RIGHT-SIDED FOLLOWED AT AN INTERVAL OF TWO YEARS, BY LEFT-SIDED FALLOPIAN PREGNANCY, WITH REPEATED OPERATION.

BY FRANCIS B. HARRINGTON, M.D.,

Surgeon to Out-Patients at the Massachusetts General Hospital; Assistant in Surgery in the Medical Department of Harvard University.

MRS. M. J., thirty-two years of age, had been married for three years. Until two years ago had been well. She then became somewhat debilitated, and suffered from pelvic pain. Menstruation was slightly painful, and occurred every three weeks. She had never been pregnant.

In January, 1891, the menstrual period was delayed two weeks, when flowing came on with severe pain. The loss of blood was slight, but continuous.

This condition had existed, with increasing pelvic pain, for three weeks, when I first saw the patient. The abdomen was slightly distended and painful to the touch. Vaginal examination disclosed a mass on the right side of the pelvis as large as a lemon. This mass felt like a dilated Fallopian tube. The patient went to bed, was given opiates and vaginal douches. The flow of blood and pain gradually diminished, but returned on slight exertion. In six weeks' time from its first appearance the bleeding ceased. The pain, however, continued, and the tumor increased slightly in size. The continued abdominal tenderness and pain seemed to demand surgical treatment.

Laparotomy was performed May 15, 1891. The dilated right Fallopian tube was removed, together with a considerable amount of bloody fluid. The patient made a quick recovery.

Dr. Whitney makes the following report as a result of his examination of the specimen:

"The specimen consisted of about twelve centimetres of a Fallopian tube with an ovary close to the uterine end. The tube at the point of removal was increased in size, chiefly from thickening of the walls, which were very vascular. Close to this point a sudden dilatation began, forming an ovoid mass about eight centimetres in the direction of the tube, and nine centimetres in circumference, and beyond this it contracted somewhat to the fimbriated end, which was closed by adhesions and contained a few small cysts. The outer surface of the tube was rough and shaggy from adhesions.

"On opening the dilated portion it was found to contain a thin membranous-looking sac, loosely attached to the villous-looking inner surface of the tube, beneath which on one side were extensive infiltrations of blood separated by narrow fibrous portions. Within the sac lay a small reddish mass the size of a cherry-stone, on which was a curved differentiated portion recalling a very early embryo, the whole attached by a sort of string to the sac.

"Microscopic examination of this showed an amorphous granular mass, at one end of which was an accumulation of black pigment.

"The ovary was small, contained a few retention cysts, no evident corpus luteum.

"The diagnosis is a tubal pregnancy with early death of the fœtus (three to six weeks), hæmorrhage into the walls of the tube, but without rupture."

The process probably remained at a standstill from

the death of the foetus until the time of the removal, and the pain is to be referred to the peritonitis.

Two years later the patient had removed to the country, where she came under the care of Dr. E. S. Jack, of Melrose, who has kindly sent me the following notes:

"On March 24, 1893, the patient consulted me at my office, complaining of uncomfortable sensations over the lower abdomen. She was flowing.

"She feared that she had same trouble on the left side, which had been found on the right side two years before, as she felt very much as she did then.

"The examination was negative as far as determining the existence of extra-uterine pregnancy on the left side, although some tenderness was found.

"I next saw the patient on March 30, 1893. She was lying upon the sofa and complained of colicky pains, and a feeling of discomfort. There was considerable tenderness over the lower portion of the abdomen. The pulse was 80 and the temperature 99.4°.

"The patient was ordered to bed, and was given hot applications, hot douches and salines.

"Friday, the pulse was 76 and the temperature was 99°. More comfortable.

"Saturday, the pulse was 76 and the temperature was 99.6°. More comfortable, though flowing some.

"On Monday, April 3, 1893, there was more pain and tenderness, particularly on the left side. Vaginal examination showed considerable resistance on the left side.

"On Tuesday, the condition was the same. I demanded a consultation and advised operation.

"On Wednesday morning the patient felt decidedly better, but about 11 A. M. I was suddenly called. The patient had more colicky pain, and was faint, and suffered from blurring of vision. I advised immediate operation, to which the patient consented."

I saw Mrs. M. J. in consultation with Dr. Jack on April 5, 1893. There was a tumor in the posterior cul-de-sac toward the left side. The patient's condition was not bad, there was pain and some flowing.

I agreed with Dr. Jack in the diagnosis of probable extra-uterine pregnancy. As the immediate condition was not threatening, it was decided that we should delay operation until the first reappearance of severe pain or other urgent symptoms. On the following day there were signs of internal hæmorrhage.

It seemed unsafe to defer operation longer. An opening was made through the old line of incision. The abdominal cavity was reached with some difficulty, owing to the adhesions of the omentum. It was found to be full of dark blood and blood-clots. The dilated tube and the ovary on that side were excised. The blood and clots which lay among the intestines as high up as the diaphragm, were removed. The abdomen was closed without drainage. The patient made a good recovery, and now is quite well.

The patient's condition before the last operation did not seem especially bad. There had been some quite severe pain accompanied by giddiness. Neither the countenance nor the pulse gave a true indication of the large amount of the concealed hæmorrhage.

This case affords strong argument against delay. Waiting for extreme symptoms in extra-uterine pregnancy should be discouraged as it should be in case of appendicitis.

The question must arise whether the manipulation of the preceding day did not assist in producing the

hæmorrhage. Such a result is, of course, quite possible.

The liability to rupture of the mass by handling should always be borne in mind. An examination must try the strength of the tissue much more than any movements or acts of the patient.

Dr. Whitney makes the following report of the specimen removed at the second operation:

"The specimen was a pear-shaped dilatation of the Fallopian tube, which measured about eight centimetres in length, and about four centimetres at its greatest diameter at the fimbriated end, which was widely opened when received. The inner surface of this dilatation was quite smooth except in one or two places where there was a little roughness and a hæmorrhagic mass. The walls were thin and fibrous.

"With this was a rounded mass of blood-clot (which had come from the interior of the sac, probably), rough on its surface and containing in its centre a very thin, fibrous sac. There was also an embryo about four and one-half centimetres long (about the eighth week). The ovary was small, and contained a corpus luteum one and one-half centimetres in diameter.

"The diagnosis is a tubal pregnancy, with rupture through the fimbriated end of the tube at about the eighth week."

A CASE OF TUBERCULOUS PERICARDITIS WITH ENORMOUS EFFUSION; GENERAL TUBERCULOSIS; AUTOPSY.¹

BY EVERETT A. BATES, M.D., SPRINGFIELD, MASS.

W. J. J. P. was a marble-carver, fifty-eight years of age. His father had died at thirty years of "dropsy"; the mother at forty years of "consumption of the bowels," with cough as a persistent symptom in her illness; and a sister at twenty-eight years of the same trouble as the mother.

Mr. P.'s army experience resulted in a bullet-wound through right flank, followed by necrosis of the crest of ilium, with complete recovery in fourteen months.

Four years later than this, when thirty-three years of age, and coming on after exposure, he had an illness characterized by fever, loss of strength and flesh, cough and expectoration, lasting ten weeks, called "quick consumption," and terminating in a rapid convalescence and recovery.

There is a history of intermittent fever for four consecutive springs some twelve years since; but apart from the above, and a tendency to "lung colds" and temporary cough, the subject of this report had considered himself well and robust until three years ago the past spring, when he had a sickness, called by himself "grippe," associated with fever, debility, and cough without expectoration. He considered himself well in a month, after taking tonics, including cod-liver oil.

Again, eight months later, and a year before his last illness, similar attacks, all termed "grippe." But during these three years — noticeably the past year — there has been slight but gradual loss of flesh and physical vigor; and during the last five months there again developed cough, slight at first, but later hard and useless. He began to feel conscious of an afternoon temperature, and finally, from increasing weakness, gave up work February 8, 1893. During the

¹ Read at the meeting of the Hampden District Medical Society, September 19, 1893.

next ten days, slight dyspnoea and palpitation on exertion developed, with vague præcordial uneasiness, leading him to consult Dr. C. P. Hooker, with whom I saw the case March 18th, and by whose courtesy I am enabled to make this report.

The patient was a large, well-developed man, at this time fairly nourished. Skin sallow and dry; lips and nails a little dusky; very slight cedema of legs and ankles and of trunk, especially noticeable in the præcordial area; slight puffiness of eyelids. The jugulars pulsated and the veins of forehead were distended. Right semi-ventral decubitus was invariably assumed. The temperature varied from 100.5° to 102° in the afternoon, with a morning remission to normal. Pulse was 120, irregular and of fair strength. Respiration 26.

Inspection of chest showed præcordial fullness, with obliteration of intercostal spaces in this area. There was absence of cardiac pulsation or apex-beat. The præcordial fullness had for its upper boundary a line extending from the lower margin of the fifth rib, eight and one-half centimetres to the right of median line, to the junction of the right third rib with sternum, and thence in a gradual curve across sternum to second left interspace, downward through left nipple to fifth rib at a point thirteen and one-half centimetres from median line. With the patient sitting, this curve flattened perceptibly.

The heart-sounds—not abnormal in character—could be heard only, and faintly, in the second interspaces and the fifth and sixth interspaces left axillary line.

Dulness in the back was found below the eighth interspace scapular line on right, and eighth rib correspondingly on left. A few medium, moist râles above; lungs negative elsewhere. The liver was palpable below the costal border, with its lower line of flatness extending directly across abdomen.

The abdomen was full, not distended, with moderate dulness in flanks.

The urine was high-colored, loaded with urates, specific gravity 1026, no albumen, and no casts detected. No sputum could be obtained. The etiology of this affection was considered as, probably, tuberculous.

During the remaining six weeks of life the patient was comfortable; there was gradual loss of strength and moderate increase of plural and abdominal effusions, without apparent increase in pericardial.

Aspiration of the pericardium was considered, but not done, owing to the remarkable absence of distressing symptoms in spite of the enormity of the effusion.

During the last week delirium and anginal attacks at night developed; and the patient died suddenly on the morning of May 1st, while attempting to get out of bed.

The autopsy was performed eight hours after death. Rigor mortis present. Sternum prominent, slight general cedema, and subcutaneous tissues of trunk very watery. Head not opened. A considerable amount of clear serum escaped on opening the abdominal cavity. On removing the sternum, the pericardium presented as a large, distended bag, tense and nowhere adherent. The lungs were collapsed, and both pleural cavities contained a considerable amount of clear serum.

The outer surface of the pericardium showed numerous whitish elevations, some confluent and others dis-

crete. On incising the sac this pericardial layer was found to be greatly thickened, in portions as much as six or seven millimetres; the sac contained two litres of turbid, bloody serum. The cardiac layer of pericardium was everywhere thickened, and resembled so-called honey-comb tripe, and on section presented numerous opaque and yellowish points, and some yellowish masses scattered here and there. The heart itself, apart from a moderate degree of hypertrophy, was normal; its cavities were empty.

The pleura were nowhere adherent; the pulmonary layer was everywhere studded with grayish, opaque points up to a pin-head in size; the costal and diaphragmatic layers were free of these. The lungs, at the apices of the upper and lower lobes, showed old fibrous scars, and in other portions—as a rule, just beneath the pleura—many scattered and conglomerate tubercles. The air-passages contained reddish, frothy fluid. The bronchial glands and those in the anterior mediastrium were enlarged, caseous, and several perceptibly softened. The kidneys and spleen contained a few scattered tubercles. The pericardial fluid was not examined.

A CASE OF ACUTE HÆMORRHAGIC PANCREATITIS.

BY W. E. PAUL, M.D., BOSTON.

THE following case is reported as having some bearing on the subject of appendicitis. At the same time it illustrates the difficulty not infrequently presenting itself in making an ante-mortem diagnosis in abdominal affections. Moreover, cases of acute hæmorrhage into the pancreas are sufficiently unusual to warrant the report of an undoubted case however incomplete the data.

E. C., a robust farmer, aged sixty-two, suffered thirty years ago from severe intestinal symptoms. For five days death was expected, when something seemed suddenly to turn over in his stomach, and an intense epigastric distress, with vomiting, was relieved. The vomitus was black, but did not suggest blood.

Nine years later he suffered from symptoms similar in character but of less severity. A sense of discomfort was described as centering in the lower chest front and epigastrium. Every few days during the more recent years the distress has recurred, and during the past year its intensity has increased. For the past six years the patient has been confined to the house six weeks at a time. In the last summer of his life the attacks recurred daily, and required the patient to lie down.

Tuesday, October 3d, the patient felt more miserable, and at 11 A. M., Wednesday, had a decided pain in his epigastrium and under the lower half of the sternum, extending to each side perhaps as far as the nipples. He was looking forward eagerly to his dinner, feeling that the meal of pork and onions would relieve the distress and pain. He eat heartily, but immediately after finishing his meat was forced to leave the table and vomit the meal. Considerable retching followed, and the pain increased.

After about four hours the patient was visited, and was found pale, with a cold perspiration on the temples and hands; and suffering severely from most acute pain referred to the epigastrium and substernal region. The pulse was 70, of good strength, and the temperature was normal. Sulphate of morphia

(gr. $\frac{1}{4}$), with sulphate of atropia (gr. $\frac{1}{16}$), was given subcutaneously, and a few whiffs of chloroform added before the pain was at all relieved. The abdomen was moderately distended and tympanitic, but there was no tumor or special tenderness in the colic region. The bowels had moved daily, and operated twice freely on Wednesday morning. No gas had been passed since the pain set in. An enema was given, but nothing came away. Four hours later another enema was given without effect, though Epsom salts were added. The pain continued; and sulphate of morphia (gr. $\frac{1}{4}$), with sulphate of atropia (gr. $\frac{1}{16}$), was administered.

At 11 A. M., of Thursday, the pain was most severe. The pulse was 120, and the temperature subnormal. The feet were cold. Some dark fecal matter had been passed without gas. Occasional vomiting through the night had ceased about fourteen hours before death. The abdomen was now considerably distended and tympanitic. A diagnosis of appendicitis with perforation, was made. The question of ulceration from gall-stone, duodenal ulcer, internal obscure strangulated hernia, volvulus, and invagination was considered.

Dr. W. G. Reed, of Southbridge, was called in consultation, and the possible help of an operation caused a summons to be sent to Dr. Homer Gage, of Worcester. In the mean time, the patient failed rapidly, and at six o'clock Dr. Gage decided an operation was not warranted. The diagnosis he considered obscure, but inclined to the belief that there was an obstruction of the bowel, with perforation. The patient failed steadily, the abdomen swelled more and more, the breath becoming shorter and shorter, but he remained perfectly conscious. The death, thirty hours after the beginning of the attack, was apparently typical of acute peritonitis.

A partial post-mortem examination was granted. The abdomen was opened, and the omentum was found adherent from old peritonitis. The appendix was normal. The intestines were everywhere free, and showed no sign of peritonitis. Several stones were present in the gall-bladder. A soggy, heavy, enlarged pancreas was discovered, of a dark-red color: the organ was apparently loaded with blood.

Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

ARTHRORHISIS OF THE TIBIO-TARSAL JOINT FOR PARALYTIC CLUB-FOOT.

DRS. EDWARD SCHWARTZ and H. RIEFFEL report three cases of this operation with successful results.

The three cases were of adults, twenty-two, twenty-five and eighteen years of age, of paralytic equinovarus, all of whom had had previous operation or had worn apparatus, and in whom one lower extremity alone was paralyzed. The operation was by section of a tendo-Achillis, and in one case incision over the internal, and in the other two over the external surface of the ankle-joint, with section of the ligaments, erosion of the cartilages, and the bony parts being brought into apposition. In all the cases there was a firm bony ankylosis, and in all there was much improvement in walking.

The three methods of procedure are described by the authors, and consist of (1) by the anterior incision, as advocated by Albert, and later by his pupil Zinsmeister; (2) by incision above the internal malleolus, as recommended by Kirmisson; and (3) by the external incision, which is used by most surgeons. The relative value of these different procedures are carefully considered, as is also the method of the bone suture and the indications and contraindications for the operation. He gives the following conclusions:

(1) The operation is best done by external incision, as it is easier and does less injury to the important structures, without the necessity for osteotomy of the fibular; and also, if the bones of the tarsus are found to be the seat of extensive change, it gives the chance of changing the procedure at any part of the operation.

(2) It should be done in individuals having a flail foot, with whom walking is painful, and in whom apparatus has been found for any reason to be impracticable.

(3) It is also indicated in those irreducible paralytic club-feet which have resisted the use of tenotomy or of apparatus.

TREATMENT OF JOINT TUBERCULOSIS.¹

König calls attention to the three methods of treatment of this condition: (1) local treatment without the apparatus or an operation, (2) local treatment with medication by subcutaneous injection, (3) treatment by mechanical means. He inclines strongly to the mechanical and conservative methods, referring to a number of cases of spontaneous cure, and considers it wiser in a way to return to the old method of treatment, rather than to advocate too strongly active and early operative interference. He advises the use of continued extension and compression during the whole period of sensitiveness, the deformity to be overcome by extension, and later immobilization to be employed. When this is not sufficient he advises the use of injection of iodoform.

He reports 410 cases, 150 of which were treated by extension, and later by plaster for immobilization. In 50 there was an injection of glycerine and iodoform. Of 250 resections there was a mortality of 19 per cent. In 100 cases of resection of the knee in adults ranging in age from twenty to sixty-six, six died from the results of the operation and six soon after, four of these from septicæmia and two from tuberculosis. In 64 there was a complete cure; in 16 there was a sinus remaining; in eight amputation was performed.

He recommends a complete extirpation of the capsule in this joint, but does not advocate the resection of the hip-joint for coxitis, as recommended by Bardenheuer and Schmid, on account of the greater difficulty of removing all of these tubercular products. In suitable cases, when seen early, he recommends the removal of interosseous tubercular focus, but unfortunately it is not often possible, as they have usually broken into the joint when they first came under observation. In these cases he recommends, besides the erosion of this focus, the distension of the capsule with the mixture of glycerine and iodoform.

DIFFERENTIAL DIAGNOSIS OF NEW GROWTHS AND INFLAMMATORY ENLARGEMENTS OF BONE.²

Mr. Howard Marsh gives several examples of cases presenting enlargement of bone with the appearance

¹ Archiv. für Klin. Chirur., Band 44, Heft 3, p. 592.

² St. Bartholomew's Hospital Reports, 1892, vol. xxviii, p. 7.

of new growths, particularly malignant disease, all of which were found to be of an inflammatory character and contained pus. He cautions against the hasty diagnosis of malignant disease in these cases, and advises exploratory incision in all, and, if necessary, the microscopic examination with staining. As an aid to the diagnosis, he gives the following points to be observed: (1) age (all under twenty are usually inflammatory), (2) distinct history of injury, (3) the shape of the swelling, (4) the persistency of the swelling, (5) the rate of growth, (6) the condition of the skin and deeper soft parts over the swelling, (7) pain, (8) body temperature.

OSTEOMALACIA DURING PREGNANCY.³

Seligman reports a case of this condition occurring in a woman of thirty-seven, beginning during the seventh pregnancy. At the time the condition was very bad, and there was considerable complaint of pain in the pelvis. In the following seven years there were four pregnancies; and in the last the delivery was by version. At this time the patient was going about with the aid of crutches. Between the tenth and eleventh the patient fell, fracturing the thigh. When seen in the thirty-fourth week of the twelfth, the general condition was extremely bad. The right leg was two inches shorter than the left; the abdomen unusually prominent; there was a right kypho-scoliosis in the dorsal region, and left in the lumbar. The child was delivered by Cesarean section, the pelvis showing osteomalatic changes. After delivery the general condition was bad, and the patient was put to bed with the whole trunk placed on extension; and after eight weeks the condition was very much improved. The length of the body had increased seven inches. The right leg was nearly the same length as the left, and the patient soon was able to get about and attend to her household duties.

SUTURE OF TENDONS.

In the *Revue d'Orthopédie*, Dr. A. Dupureil reports a case of injury of the hand in which the deep and superficial tendons were cut, and in which operation was done later in the attempt at reunion. There was possible flexion of the phalanx on the metacarpus, probably due to the interossei, but none of one phalanx on the other. The operation was decided upon to attempt to rejoin the cut ends of the tendon. The incision was made over the site of the tendon of the index-finger; and in this, the distal end was found, but a long search failed to reveal the other end of the divided tendon. Therefore, the portion which was found was sutured to the tendon of the middle finger, and the wound closed. For a time there was no power of flexion over the finger, but this soon begun to appear, and later the use of the finger became almost as perfect as before the injury.

MALLET FINGER.⁴

Dr. Robert T. Mann reports two cases of this condition, which is described as being found after a blow on the end of the finger while extended, and in which some of the fibres of the extensor tendon are ruptured, resulting in a flexion of the terminal phalanx on the first and second. As a rule, the deformity is permanent, the tendon having little or no power over this phalanx. The treatment is by long incision over the site of the

injury, separating the tendon into the two natural fasciculi, and dividing the tendon transversely, advancing each point along its own side, and securing it to the skin at the base of the nail by a suture, tying on the outside. This is done rather than suturing through the periosteum, as it affords better hold. The nail is often lost temporarily; and after operation there is sometimes an over-extension, which disappears in time.

LAMINECTOMY FOR POTT'S PARAPLEGIA.⁵

Dr. Samuel Lloyd gives a comprehensive view of the condition of this subject at present, and the following deductions:

The operation is contra-indicated (1) in cases where there are other complicating tubercular lesions; (2) in cases where mechanical treatment has not been applied.

It is indicated (1) in cases where the posterior spinal disease is made out as the cause of the paraplegia; (2) in cases where the lesion seems to indicate the failure of mechanical treatment, that is, where dislocation has occurred or where a sequestrum is causing compression; (3) in cases where during the employment of intelligently applied apparatus the symptoms continue to increase in severity; (4) in cases where after a period of careful mechanical treatment, say eighteen months, the condition has remained stationary; (5) in cases where pressure myelitis threatens the integrity of the cord.

LATER RESULTS OF LAMINECTOMY FOR PARAPLEGIA DUE TO ANGULAR CURVATURE OF THE SPINE.⁶

Mr. W. Arbuthnot Lane gives the ultimate results of eleven cases previously reported by him. In two of the cases death occurred, but only one could be attributed to the operation; and of the other nine, two derived but temporary benefit. In the other seven the relief was permanent, both as regards the paraplegia and the local condition. He considers the operation one of not great severity, and one that should be attempted in all cases presenting these symptoms.

LATERAL DEFORMITY OF THE SPINE IN POTT'S DISEASE.⁷

Kirmisson reviews the literature of the past few years on this subject, and takes a neutral ground in reference to the etiology of this deformity. He describes the two forms which are met with: the one, in which the lateral deviation accompanies the angular deformity; and the other, in which the lateral deformity exists alone. The question of differential diagnosis is considered, but little new light is thrown on the subject. The presence of tenderness over the spinous or transverse processes is regarded as of value, existing only in the cases of caries. He calls attention to the fact that where the lateral deviation accompanies the kyphosis it may be either postural purely, or due to the bone change; but when existing alone, that it is due to muscular contraction. In the former, although under recumbency, the deformity may nearly or quite disappear, under suspension it is more marked by the increased muscular contraction. He considers the existence of the lateral deformity in Pott's disease as an indication for prolonged rest in bed.

Marlier⁸ adds a contribution to this subject, and re-

³ Centralblatt für Gynecologie, 1893, No. 28, p. 649.

⁴ Medical News, September 9, 1893, p. 287.

⁵ Annals of Surgery, 1892, vol. xvi, p. 289.

⁶ British Medical Journal, December 31, 1892, p. 142.

⁷ Revue d'Orthopédie, 1892, No. 6, p. 440.

⁸ Loc. cit., 1893, No. 3, p. 178.

ports a case in which there was a typical scoliotic curve in which there was pain in the side and leg, but the back showed no rigidity or muscular spasms, and also the child was able to walk about freely. A treatment of gymnastic exercises was given, but in the course of a few months a knuckle appeared and later an abscess. In this case there was not present the tenderness of pressure over the transverse process which is mentioned by Phocas, who reports a case with this symptom in a boy of fourteen.⁹ This case showed a slight projection at the point of deviation at the first lumbar vertebra. There were no subjective symptoms, and the motions of the back were entirely free. The case developed later with a kyphosis and abscess.

Dr. Ridlon¹⁰ gives cases in which this deformity is present, but in which the diagnosis was doubtful, and in which the lateral deformity was marked while the symptoms were light. He thinks the diagnosis should be based rather from the absence of muscular spasm than that of pain or of the character of the deformity, and that when the deformity is high when spasm is doubtful, the degree of rigidity should determine the diagnosis.

FORCIBLE CORRECTION OF ANGULAR DEFORMITY OF THE KNEE.

Dr. J. E. Goldthwait¹¹ reports altogether eleven cases which have been operated on within a period of from five years to one year ago. The contractions were from various causes, chiefly from tumor albus; a few from rheumatism, and one from gonorrhœa. In one the trouble appeared at the age of thirteen months and had existed until the time of operation, which was at the age of sixteen, at which time the leg was flexed at a right angle and markedly subluxated. At present the patient has a useful joint with free motion in an arc of ninety degrees.

In all of the cases the results were good, giving useful joints, crutches having been discarded. It is interesting to note that in all of the cases, the operation was followed by very little reaction or pain, and each case was up in two weeks.

For the employment of force in those operations the author had modified the apparatus devised several years ago by Dr. Bradford for the correction of the angular contractions of the knee, in which the deformity is maintained by fibrous adhesions. As modified, the apparatus is adjustable, and can be used upon any patient regardless of size. The arch on which the power is applied is movable on the uprights, and can be secured at any distance from the fulcrum. The counter-pressure comes upon a single leather pad, and is so placed that the force is always directed against the strongest part of the femur, no pressure coming along the epiphyseal line.

OPEN INCISION IN CONTRACTED KNEE.

Wahnean¹² reports from Schede's Clinic eight cases of open incision in contraction of the knee and hip, with healing by blood-clot. The same method is used successfully by Lorenz and Hoffa.

ETIOLOGY OF PES CALCANÆUS.

Bayer¹³ refers to the grouping by Nicholodani, in which all the cases of these were divided into two

groups, the congenital and the paralytic acquired, and reports two cases which he considers show that there should be added another classification to these two. In one there was a phlegmonous inflammation of the plantar region, and in the other an injury to the sole of the foot by a piece of broken glass. In both of these there was contraction resulting in this deformity of the foot. He considers that the condition is due to the position of the foot during walking, and that by the permanency of this the contraction occurs. In both of these cases the muscles of the calf were atrophied, and there was a secondary retraction of the muscles which resulted in the pathological condition of the foot.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY M. JACKSON, M.D., SECRETARY.

REGULAR meeting, Wednesday, November 15, 1893, the President, Dr. F. C. SHATTUCK in the chair.

DR. H. F. VICKERY read a paper on

THE PREVENTION OF TUBERCULOSIS.¹

DR. V. Y. BOWDITCH: I am very glad to have the privilege of listening to Dr. Vickery's paper. I am sure it will bear good fruit. I think that no experiments that I have seen recorded thus far can compare in beauty of result with those of Dr. Trudeau made in 1886 or 1887,² in which he speaks of environment for the cure or prevention of tuberculosis. He made experiments upon rabbits and I should like briefly to review them. He took fifteen rabbits and divided them into three sets, five of which he inoculated with tubercular virus, and placed them in the best possible hygienic position, that is, putting them on an island in the middle of a lake and feeding them with vegetables every day. Another set he inoculated keeping them in a damp, dark place. The other five were not inoculated, but lived in a damp, dark place. After two or three months those on the island were caught and killed. In only one was there any symptoms of tubercular infection having been carried through the body, the others all being fat and remarkably healthy. In the five inoculated and put in the damp, dark place, four died in a few weeks and all were filled more or less with tubercular disease. The remaining one was tuberculous also. The others were simply kept in a damp, dark place without being injected with tubercular virus, and they were simply thin and miserable, but no tubercular disease was found upon examination after killing them a few months later. From this I think we can argue that among human beings environment can act in the same way. I hope very much that the Society will take some action upon this question. It seems to me that by combined effort we can accomplish very much more than by one man single-handed. I hope that some day we can see in Boston, as well as elsewhere, laws made by which no such buildings should be erected like certain apartment houses which I have

⁹ Revue d'Orthopédie, 1893, No. 1, p. 14.

¹⁰ New York Medical Record, September 17, 1893.

¹¹ Boston Medical and Surgical Journal, September 7, 1893.

¹² Hamburg Hospital Reports, 1890.

¹³ Prager med. Woch., 1893, No. 12.

¹ See page 5 of the Journal.

² Transactions of the American Climatological Association, May, 1887.

seen upon the Back Bay and in other places, where the only means of ventilation from the bed-room was by a door leading to the parlor or dining-room and one window opening into the well, three feet square, into which all the water-closets were ventilated. I wish also that we could do in Boston what they are doing in some places where in the public schools boys and girls are taught to avoid the disgusting habit of spitting in houses and in the streets. I wish also that the effort to stop smoking on the rear of the open cars had been successful, not for the smoking itself, but because of the filthy conditions of the back seats when ladies and others are obliged to get in them, for no one knows what sort of tubercular material may be there to be carried on their skirts. In regard to the action of boards of health in declaring tuberculosis an infectious disease in the same rank with diphtheria and small-pox and scarlet fever, I feel that we must be cautious. It is an infectious disease according to our present knowledge but not in the same degree as the others and the conditions are very different. It seems to me that with patients who are just beginning to show signs of pulmonary disease it would have a most depressing and deleterious effect to have such action taken as is now done for the acute infectious diseases. The greatest care, however, should be taken among the friends. They should be informed of the state of the patient and steps taken to prevent the spread of that disease as far as possible and within reasonable limits. I always direct my patients never to use handkerchiefs or any article of clothing, simply to have cloths or paper cups that can be burned immediately, or china sputa cups, the contents of which can be destroyed.

I think Dr. Vickery deserves the thanks of the Society for his paper.

DR. J. C. WHITE: From the title of this paper I hoped that some allusion might be made to tuberculosis of other parts of the body as well as of the lungs, because the communication of other forms from person to person as shown in skin clinics is no small evil. For example, I treated last year at the Massachusetts General Hospital thirty-five new cases of tuberculosis of the integument, in a condition to have extended the disease again in more serious forms possibly to other persons. For a long time, you know, the identity of lupus and other forms of tuberculosis was not recognized. Now it is known that a large proportion of patients with lupus eventually die of consumption. Such patients are generally members of families, and no means are taken to prevent contagion. We see many cases where, from the sputum undoubtedly, tuberculosis of the hands and lungs occurs in the same person. We observe the former especially in attendants upon consumptive patients and in those who have charge of children with scrofulous sores in the neck: scrofuloderma. Again, it is possible that a person with tuberculosis of the hands, or other forms of tuberculosis of the skin, may introduce the bacilli through the mouth to more dangerous tissues and thus produce more serious and rapidly fatal forms of the disease. I want to say also that I think it is a mistake to consider tuberculosis in any way on the same level of danger as scarlet fever and small-pox, so far as any attempt to control it by boards of health is concerned. It should be considered rather like leprosy, as it is communicated in the same way. Leprosy occurs still in some communities as frequently as consumption does in others, and if consumption were accompanied by such frightful ex-

ternal appearances and disfigurement as leprosy, no doubt the same methods of restraint might long ago have been used against it, and it might have been crushed out from civilized communities exactly as leprosy has been crushed out by exclusion, and although it would seem a cruel thing that we should treat patients with phthisis as lepers were formerly treated, there can be no doubt that if those measures were exercised, that we should exterminate tuberculosis from our midst. The lazarettoes in Europe several centuries ago were numbered by hundreds and it was only because such active means were taken that that disease was crushed out. I hope that this subject may be made the subject of more serious consideration on the part of this Society.

DR. E. O. OTIS: With very great interest in the general subject of pulmonary tuberculosis, Dr. Vickery's paper upon its prevention has especially appealed to me and I feel indebted to him for its presentation. I am, as he is, a member of the Pennsylvania Society for the Prevention of Tuberculosis, and I wish we had some similar society in this community. It seems well nigh an hopeless undertaking to prevent contagion when you consider the innumerable ways and avenues by which the disease may be disseminated. Consider how constantly we are exposed to the contagion almost everywhere we go—in the various vehicles which transport us—steam and street cars, carriages; in the various buildings we enter, halls, hotels, theatres. How many thousand people are constantly expectorating bacilli in-doors and out. The physician himself—so familiar is he with the disease I suppose—in so many instances does not seem to realize the danger of contagion or the importance of guarding against it in every possible way. Consider the waiting-rooms in our out-patient departments where there is generally a not inconsiderable number of tuberculous patients, waiting anywhere from a half-hour to an hour and a half and who expectorate about to their own and the risk of others. Then consider the matter of vocation: poor people are obliged to keep at their work so long as they are possibly able to do so, and so we have many tubercular cases working with others and exposing them constantly to the dangers of the disease; for example, I had last winter at the dispensary a *baker* with quite advanced pulmonary tuberculosis; often he was unable to work, being without means he slept every night in a bake-house through the kindness of one of his friends; what an opportunity for the dissemination of the contagion. It seems to me one of the great needs of the present day are hospitals, State, City or National for the care and seclusion of poor tuberculous patients. As it is now, no adequate provision is made for them in any of the charitable institutions and they wander about often ending their lives in the poor-house.

One other point I wish to refer to, and that is the matter of proper respiration. I have had the opportunity of examining a good many so-called well people in regard to this and it seems to me that we do not give sufficient consideration to it. We must *teach* people to breathe properly. We must remember that the city life is for the most part a sedentary one, and unless we give especial attention to it we rarely fully inflate our lungs. It has got to be a matter of conscious exertion. Each day, and several times a day, I believe, full lung inflation should be practised. It is one of my standing rules, in advising men as to exercise in

the gymnasium, that they should take deep full breaths several times a day. After this is practised a while they establish a custom of breathing more deeply and fully all the time.

DR. GREENLEAF: I regret that I was unable to hear Dr. Vickery's paper. The subject is one in which we are all especially interested. While we may no doubt accomplish much towards the prevention of tuberculosis through the efforts of boards of health and by other general measures, there is a way of preventing its spread, which we may carry out as individuals. The idea for this was suggested to me largely through the investigations of Dr. Stone, who found that the dried sputa of consumptives contained living bacilli after a considerable length of time. I think his observations showed that the bacilli were alive and capable of causing tuberculosis in animals after at least three years. Such facts show the very great necessity for having some means of disinfecting the sputa as soon as passed. In hospitals we have the sputa cups, but they do not meet the difficulty we find with patients when outside, whether in the streets, the cars, the hotels or in their own homes. It occurred to me that if we could have something in a convenient shape and of such material that patients would use it whenever they expectorate that we should accomplish a good part of the battle, and these samples which I take pleasure in presenting to the Society this evening demonstrate one way of meeting the problem. My first thought was to have a small bit of thin paper of paraffine or other impervious material and place on it a small wad of absorbent cotton, then to have the patient use one every time he expectorated, roll it up and put it in his pocket or a convenient receptacle and then burn all the wads immediately on reaching home. I advised such for a while. An improvement on this plan appeared to be to have the bit on which each sputum was to be passed made of absorbent material only, and then to wad these up and store them in a bag of impervious material, and then burn bag and all on reaching home. I am endeavoring to have a manufacturer make up such napkins for me by the wholesale, so that they will be as inexpensive as possible and yet sufficiently neat in appearance so that patients of every condition may be induced to use them. In the meantime I am advising my patients to buy the form of absorbent cotton, known as lintine, which comes in a convenient thickness, or sometimes thick enough for two or three napkins. I have them cut the rolls into small squares, say three by three inches as in these samples, then I have them use simple brown paper bags to put them in.

I have used these especially in the Boston Dispensary and have found no difficulty in getting the patients to adopt them on explaining to them the possibility that they may have taken their disease by having inhaled particles of dried sputa carelessly or ignorantly expectorated by other consumptives in places where they have slept or have otherwise been exposed; moreover I carefully explain to them that unless they adopt some such device they are likely to similarly infect their relatives and friends.

I would add that I do not confine the use of these napkins to consumptives. I endeavor to encourage their use in every disease accompanied by expectoration, partly with the idea of making it a little easier for the consumptives, so that they may be relieved of the possible odium of being the only users of such napkins,

and partly to be especially on the safe side regarding all forms of the offensive and dangerous habit of expectoration.

DR. O. K. NEWELL: I am very glad to have heard this interesting paper. I think that I have sent fully a half-dozen cases to Professor White's clinic recently where there has not been any doubt at all that there was a direct auto-infection producing tuberculous disease in children who were living in families where there was consumption. Dr. Otis says there are a great many sources of infection, but I think the two real sources of evil are in the first place the sputa, especially in this country where we are reputed to be a nation of expectorators, and in the next place the overcrowding. I think that Dr. Vickery's statement that as far as overcrowding is concerned the same conditions were to be found in Philadelphia as here is incorrect. In Philadelphia the question of overcrowding is practically eliminated because it does not exist. There are square miles of small houses and it is a well-known fact that in that city there are more single homes than in any other city in the world; there being 60,000 to 70,000 more buildings in Philadelphia than in New York City. Although they may not have perfect drainage in Philadelphia, there is not overcrowding. In reference to the advisability of boards of health taking the same attitude towards tuberculosis as towards scarlet fever, etc., I think that the fairest way to consider that subject is to remember that scarlet fever and diphtheria and such diseases are rare diseases comparatively. They are acute and rapid in their course and rapidly dangerous, whereas tuberculosis is an extremely common disease, one that is only inoculable with difficulty. The seriousness of the disease depends upon where the inoculation is made. If dried sputum is inhaled into the lungs it is in a place where it is impossible to get at it. If the eye is inoculated of course it is easy to reach it. I think that tuberculosis of the skin is not very dangerous; it is only when it involves the lungs that it is such a serious danger.

DR. E. O. OTIS: I neglected to mention a case which came to my attention a few days ago, and was of interest to me on account of the possible source of infection. It was this: A young man apparently well had been shooting, and while returning fell with his gun, wounding his thumb; he had on a pair of woollen gloves at the time, which he continued to wear after the wound was received. He went directly from Norfolk, where the wound was inflicted, to Washington and there visited the Army Medical Museum. The wound did not heal kindly, the finger was amputated, but still healing did not ensue and local tuberculosis was discovered at the seat of the wound. Later he developed pulmonary tuberculosis for which he is now at a health resort. Was it from the woollen gloves or at the Medical Museum that the bacilli gained entrance into the wound? It is an interesting conjecture.

DR. WHITE: I should like to mention the fact that I once counted the number of sputa in crossing the Common from Park Square to the West Street gate. It was early in the morning after two or three trains had come in on the Providence railroad. The temperature was below freezing. I was attracted by the great number of fresh sputa on the sidewalk and counted many hundreds before I got to the West Street gate. Very likely many of them came from persons with consumption. They were safe at the

moment because frozen, but the same number of sputa on that path in the summer would rapidly dry and be taken up by the wind and pass into the atmosphere. So, I think, we are in the constant presence of bacilli in the air from sources which are not apparent. I was going to the hospital a few days ago and passed a house in which a woman was engaged in shaking rugs out of the window. A few weeks previously the red card of scarlet fever was on that house. Very likely those rugs had been in the chamber with the patient. Children passing might readily have taken the disease.

DR. F. C. SHATTUCK: I was very glad to hear Dr. Vickery speak of the soil. I think that in the ardor of our enthusiasm at having discovered the cause of tuberculosis, as is very natural, we have at first been inclined to attribute too little importance to the question of soil; and those experiments of Dr. Trudeau, which Dr. Bowditch quoted, are certainly very important and should not be lost sight of for a moment. It is not a very easy matter to determine the relative importance of contagion and susceptibility. Within a fortnight I have seen two ladies with pulmonary tuberculosis following the death of sisters from pulmonary consumption, — ladies who had nothing to do with each other whatever, in two entirely different families. There you may say there was family predisposition. The sisters who survive were about those who were ill a good deal of the time, and it has been noted before that cases of contagion from husband to wife are more frequent than from wife to husband, the women naturally staying in the house a great deal more. But I recall a case of another kind. Some years ago I was asked to take charge of a kept woman who had pulmonary consumption and afterwards developed tubercular disease of the bladder. The young man who kept her behaved in a way different from some men, and stuck to her through thick and thin, and as far as his means would allow provided her with everything which would contribute to her comfort. He continued to go to see her. She died; and not long afterwards he came to my office feverish and with a sharp stitch in the side. I found that he had pleurisy, and sent him home to another city in the State. He pretty rapidly developed consumption, and some years later died at Saranac. He probably got his trouble from his mistress, and not through coitus. Then we have on the other side the statistics of the Brompton Hospital for Consumptives in London; the very small number of cases which have developed among attendants or physicians. And the physicians to out-patients sit three or four hours in small consulting-rooms in the most intimate contact with consumptive patients. So very common, so omnipresent we may say, is the contagion of tuberculosis that it seems almost a wonder that any of us survive. I am perfectly convinced, although it is very difficult to prove that many people are tuberculous and never know it; have pulmonary tuberculosis and get well of it. If one-seventh of all deaths from all causes at all ages are due to consumption of the lungs, I should like to know how large a contingent of the population is tuberculous somewhere or other and does not die of it. I do not dwell upon this with a view of discouraging any attempt to limit the spread of the disease which undoubtedly occurs through the sputum. It is only that I think we are apt to look too strongly on one side, and the side which presents itself to us now is the side of contagion naturally springing from the discovery of that in which the contagion resides.

DR. VICKERY: I should like to express my satisfaction in having the opportunity of hearing the opinions of other members of the Society and to say that that was one of the objects which I had in mind in writing the paper. What Dr. Otis said about respiration is confirmed by such writers on climate as Solly. As to the effect of notification in shocking early cases: I have thought of that too, and it is a valid objection, but still I find that after a while it seems wiser to me for my patients to know what they have, although perhaps if they were told the first day it might do them a great deal of harm. I have in mind some to whom the knowledge has come very gradually, but still while they have been in the early stages, and without any apparent detriment; and I have been told by a patient lately that at Saranac Lake they know what they have got and it is intended they should, so that they will take the best care of themselves. There are two sides to the matter. I think there is no doubt that the disease is contagious. I remember one case that struck me very much; a perfectly healthy mother of middle age had a married daughter come home to die of consumption. She nursed her with great assiduity and buried her. In about a year after I was called to her to see her die in the same way. It seemed to me a very plain case. Of course, we have all met similar ones. If I am going to be poisoned and killed by a disease it is not much comfort to me to know that it may not happen next week, that it is going to hang over me and kill me gradually. About cases of unconscious tuberculosis, there have been interesting pathological reports in that regard, and a good many cases are found in adults who present healed scars and who die of other diseases.

DR. BOWDITCH: I wish to emphasize one thing I said. It is in reference to cases of tuberculosis being reported to boards of health. Now while I agree with Dr. Vickery that sooner or later it is usually best that a patient should know that he has tuberculosis (I refer now to the pulmonary form) yet I maintain that for many reasons in some cases it may be wisest not to let him know at the outset, although the family or friends should know the true facts. If then, we were to follow the same rules as apply to scarlet fever, diphtheria, etc., and under the penalty of a fine for neglect, were compelled to notify the board of health the instant we detect the disease what would be the result? I need not picture the disastrous results to the patient were such active steps taken. I do not yet know the exact course the Michigan State Board of Health takes in this matter, but I must confess to having been startled by their announcement that they class tuberculosis with the acute infectious diseases, a position which I think now unjustifiable. With caution and with rational methods I believe an immense deal of good can be done by boards of health in this matter, but let us keep within bounds.

DR. NEWELL: It seems to me the boards of health can cover these two points and they do to-day practically in what relates to overcrowding. They could educate the people in regard to spitting and regulate the overcrowding without taking the same action that they do towards cases of acute contagion.

DR. VICKERY: I remember that Flick suggests that cases should be reported when the tissue begins to break down. I think that would be very difficult to carry out. I am sure many cases would not be reported. Perhaps if we started by enlightening the

public, after a time they would thank us to know it. I would thank any man, if I had beginning tuberculosis, to let me know it right away. That is from my point of view, and I think that the public may be brought to the same position.

DR. J. J. MINOT: I move that such a committee be appointed by the Chair as Dr. Vickery suggests in his paper, the committee to make a report on the best means of preventing the development of tuberculosis. Seconded. Carried.

The PRESIDENT: I will announce the committee at the next meeting.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED Meeting, held at the New York Academy of Medicine Tuesday evening, November 7, 1893, DR. B. SACHS in the chair.

DR. EDWARD D. FISHER read a paper on

ANOMALOUS CASES OF GENERAL PARESIS.

He stated that a general definition of general paresis may be given as a disease of the nervous system, especially of the brain, in which, pathologically, we find a diffuse inflammation of the membranes and cortex of the brain, and also of the membrane and systemic tracts of the cord. Typical cases follow a more or less well-defined course, the somatic and psychical symptoms going on hand-in-hand, and finally terminating in two or three years in death. Of late years many cases have been reported which differ largely from the ordinary clinical picture. Savage refers to a type of case in which all the physical signs of the disease are present, but none of the mental or psychical, or, again, when only dementia of a simple character is present. He found that the course of the disease may often in these cases be protracted, extending over many years. Dr. Fisher said it is not an infrequent experience to have our diagnosis disputed, both by the friends and by the physician in attendance, in this form of the disease, especially as under proper care improvement takes place, and because the disease is so long protracted. There may in the future be subdivisions made of the general disease as the symptomatology and pathology are better understood. It has suggested itself to him that when either alcohol or syphilis seems to be a prominent exciting or etiological factor the so-called somatic symptoms are usually the most marked. Another explanation of these cases may be that the prodromal stage is protracted. In fact, the disease, as a rule, long antedates its first recognition by friends and physician. In mental diseases, the emotions are probably the first to show evidence of change. This may express itself by undue exhilaration over a slight thing in itself, by depression, by outbursts of irritability, by a disregard for the feelings of others, etc.; or the patient may become careless, or show a lack of proper concern in regard to his health or business. On the somatic side we may have evidence of slight motor disturbance, perhaps slight tremor, slowness or clumsiness in speech, or a slightly ataxic or spastic gait. In other cases, again, the early symptoms may indicate hypochondriasis, only later on to develop with rapid strides into a well-defined case of general paresis.

Dr. Fisher then gave the histories of a few cases of general paresis coming under his observation which pursued an anomalous course. In the first case the

disease extended over a period of at least nine years, and in all probability much longer. The second case was that of a man aged thirty-eight years; excepting that he is rather forgetful and has lost interest in his personal affairs to a large extent, no mental symptoms are present. The man has the peculiar fatuous expression common to the disease; there is some tremor of the tongue and slight tremor of the face; speech clumsy; he has had two or three attacks of aphasia of short duration, lasting from several hours to a day. At times there appears to be great improvement in his condition. This will probably prove to be one of the prolonged type of cases. The man is still under observation.

Dr. Fisher said that considering these cases and many others to which he could refer, in which the course of the disease seems to be almost arrested, or even does not commence in the usual manner, it must be seen that general paresis, at least in some cases, may be much altered in its course—to such an extent, indeed, as to make the diagnosis a question of doubt. Some dementia, however, he thought always exists in these cases. Even in the early stages of a classical case, with exaggerated ideas of wealth and ability, we recognize the inconsequence of ideas and responsibility so essentially characteristic of dementia. This latter condition becomes more apparent if these cases are allowed to engage in their ordinary avocations. It will often be seen that when they are removed from hospital care, and permitted to resume their business when improvement takes place physically and mentally, that the course of the disease becomes a rapid one towards physical exhaustion and dementia.

DISCUSSION ON THE RELATION OF SYPHILIS TO GENERAL PARESIS.

DR. FREDERICK PETERSON opened the discussion by reading a paper on this subject. He stated that the question of the position taken by syphilis in the etiology of dementia paralytica is one that has been attracting great attention among syphilologists and alienists of late years. No fewer than seventy authors have contributed to the elucidation of this problem. The majority of these contributions treat of the subject from a statistical standpoint, and it would seem that sufficient data have been collected to fully satisfy all inquiries regarding that particular. Naturally, the first point upon which precise information was needed was as to the percentage of cases of general paralysis with a history of syphilis, and we are now in a position to supply it fully. Although these statistics differ very materially at times, yet the results in the main agree. The figures range from as low as 13 per cent. to as high as 88 per cent. Kjellberg has taken the stand that all cases of general paralysis are of syphilitic origin; that the cases are affected either congenitally or through acquisition. This author stands quite alone in his assertion, which is not justified by observation or facts.

Dr. Peterson said his own statistics on this point are rather questionable, as are all obtained from large public asylums to which patients are taken in stages of the disease too far advanced for them to give trustworthy information regarding themselves, and whether they are generally brought by relatives or officers unacquainted with such an etiological factor in their histories. There were admitted to the Hudson River State Hospital for the Insane 287 cases of general

paresis. In 55 of these syphilis was definitely ascertained to have preceded the disorder. In the remaining 232 it was either absent or unascertainable. Actually, then, only 19 per cent. were found to be syphilitic; but, assuming that one-half the others were affected, the total ratio would be in the neighborhood of 60 per cent. of the cases. At public dispensaries we see these cases in the earliest stages, when histories may be more exactly obtained. At the Vanderbilt Clinic, 40 cases of general paresis were observed; definitely syphilitic, 10; definitely not syphilitic, 12; unascertained, 18; taking the 22 cases in which the exact facts were obtained, we have 45.4 per cent. certainly syphilitic, and 54.5 certainly not syphilitic. From an examination of all the figures collected above from various sources, it would, perhaps, be fair to assume that about 60 to 70 per cent. of all cases of general paralysis have a syphilitic history. The fact is thus established that syphilis is a striking etiological factor in general paresis, but that 30 to 40 per cent. of the cases are not syphilitic. A much more difficult problem is to determine the exact relationship between syphilis and general paresis. Is it a direct cause, or merely a contributing agent? Is it in syphilitic cases a post-syphilitic affection, or is foregone syphilis merely a predisposing factor? This problem may be examined from several standpoints. In the first place, we have the rather remarkable statistics of Lewin, of 20,000 cases of syphilis, one per cent. of which became insane, and in which not a single case of general paresis developed. Then we have the further fact that among the native Egyptians, where syphilis is one of the most widespread of disorders, no case of general paresis has as yet been reported. It is significant, by the way, that alcoholism is seldom or never observed among them. Again, from the pathological standpoint, it is well known that the direct invasion of the brain by syphilis is characterized by changes in the blood-vessels, by the formation of gummata, or by diffuse meningeal infiltration. The first and third of these processes is most frequent in and about the base of the brain; the second is more common in cortical regions. On the other hand, in general paresis we have a chronic meningitis of the convexity, with atrophy of the cortex, and the processes in this disease and in syphilis are quite distinct, although there are cases in which a syphilitic meningo-encephalitis may closely simulate, symptomatically, dementia paralytica.

There are some who argue that tabes and general paresis are frequently associated, and that tabes being a form of syphilitic disease, general paresis in consequence must owe its origin to syphilis. If the two diseases have the same etiological imprint, there ought to be a close correspondence in the percentages of syphilis in relation to each; but the consensus of opinion seems to be that a history of syphilis is found in only 60 to 70 per cent. of general paresis, whereas in tabes the percentage ranges, according to different authorities, from 80 to 98 per cent. At the Vanderbilt Clinic, in 83 cases of locomotor ataxia, 51 were syphilitic, 20 not syphilitic and 12 unascertained. Of the 71 cases of tabes of whose specific history we have exact data, over 71 per cent. were syphilitic and over 28 per cent. not syphilitic. That is, then, among cases equally well studied and from the same sources, 45.4 per cent. of general paralytics were syphilitic, and 71 per cent. of tabetics. Dr. Peterson said he did not agree with the statement made by Dr. Sachs in a re-

cent article, that there is a very frequent development of tabes after dementia paralytica, and of dementia paralytica after tabes. In cases of paralytic dementia with tabetic symptoms the nerve fibres of the posterior columns are often little if at all implicated. One of the facts which has been employed against the opinion that general paresis is a late form of specific disease is the absolute futility of anti-syphilitic treatment. In every form of cerebral syphilis proper we are often enabled to accomplish a great deal of good by vigorous and systematic treatment, whereas in general paresis, even if the history of syphilis is clear, no appreciable effect is produced by anti-syphilitic remedies.

In concluding his paper, Dr. Peterson said that in his opinion dementia paralytica has no immediate or late relations to syphilis as a direct cause. Syphilis is a common etiological factor, but only in the sense of its being a predisposing cause. It prepares the soil in more than half of the cases for the development of dementia paralytica, this disorder having its direct causes in alcoholism, sexual excesses and over-strain of the mental functions. The higher nervous elements are rendered prone to degeneration by the fore-running specific disease, which, as is well-known, gives rise to a cachexia with changes in the constitution of the blood.

DR. GRANGER said that the question of a change in the character of the mental symptoms of paresis from the standard type of the disease is one that has been very much debated and studied; and it looks as though the outcome of it might be that the disease known as general paralysis of the insane would be found to embrace more than one disease — possibly more than two — the distinction being based upon the clinical aspect and the pathological conditions present. The variations from the ordinary type of the disease, as he has observed them, have not been so marked in this country as abroad. Two or three per cent. would probably cover the melancholic form of paresis in this country; while in England, in some of the largest asylums, the number has risen as high as 15 or 20 per cent. of the cases admitted. He has seen two forms of the melancholic type of paresis: in one of these the delusions of the patient, although they were those of depression in one sense, were of grand depression. For instance, a patient was very much depressed with the idea that he was the devil; he would constantly cover his face and head in order to hide his horns, and carry a newspaper behind him in order to prevent his tail from growing. But he was the biggest devil, the greatest and the wickedest devil that could be imagined. On the other hand, there are cases of general paresis in which there is simply melancholia with no grand delusions. Another anomalous type of paresis is that in which no special symptoms are present, excepting that of progressive dementia and a feeling of satisfaction; this type is becoming more and more common. The question whether the disease is lengthening or shortening in its course is very much discussed; many think that its course is being shortened, while on the other hand, according to some of the English asylum reports, it is being lengthened. In this country we still commonly see the typical form of general paresis, and death takes place about thirty months after the full development of the disease.

In regard to the relation of syphilis to general paresis, Dr. Granger said he agreed very closely with the views expressed by Dr. Peterson. Syphilis itself

does not cause the disease, and it is very difficult to tell what does cause it. That syphilis is very common in Egypt, and that venereal excess is also very common there is acknowledged by all, and that general paresis is very uncommon there is also true, but other conditions exist there which the world over are favorable to the non-development of paresis. These natives possess neither energy nor ambition, and spend most of their time basking in the sun. In the coal regions in England, general paresis is quite common, the percentage in the asylums being from 30 to 40 per cent.; in the adjoining agricultural districts the percentage falls as low as two or three per cent., and yet probably syphilis and intemperance are very common in both of these communities. In this country, general paresis rises as high as 15 to 20 per cent. in the Eastern States, while in the Western and Southwestern States the percentage is very low indeed. Yet syphilis is undoubtedly very common in the latter localities; so is drunkenness; still, general paresis is very infrequent there. It takes something besides syphilis or intemperance to produce the disease. In the cities we call it the strain due to high civilization. In the coal regions we call it their laborious and peculiar life. Syphilis, while it does not cause paresis, is undoubtedly a strong factor in its production. As regards the value of statistics in this connection, the speaker thought it extremely difficult to get accurate statements from the patients who are sent to asylums, and upon these we are usually dependent for our statistics. The history of syphilis often dates back many years and is extremely untrustworthy.

DR. LYON said he has often been struck by the fact that when a history of syphilis is obtained in a case of general paresis, the former disease usually existed a long time ago. Most of the patients state that they were treated for the disease and cured, and that they have had no manifestation of it for many years. During the current year seventeen cases of general paresis were admitted into the Bloomingdale Asylum; of these, twelve have a pretty clear history of syphilis. In only one of these was the syphilis as recent as four years previous to the development of the general paresis. In almost all the cases the patients had probably received the modern treatment for syphilis, that is, mercury and the iodides.

Dr. Lyon said he agreed with the previous speakers, that while syphilis is not the immediate cause of general paresis, it is one of its provoking causes; it produces instability of the brain, which then yields to other more immediate causes. These same patients who give a history of syphilis have for many years led liberal lives. The course of the paresis in these cases seems to be more rapid than in those uncomplicated by syphilis. The speaker said that cases of paresis of long duration are not unknown—indeed, not very infrequent. He has met with one case in which the disease lasted over ten years. Its duration depends on the patient's constitution.

Dr. FIELD referred to the unreliability of statistics obtained from patients affected with general paresis. He has never seen a paretic in whom active syphilitic symptoms existed. The history of syphilis obtained is usually an old one. It is generally combined with a history of alcoholic and venereal excesses. He has made inquiries among those engaged in the treatment of venereal diseases, and who have followed up their syphilitic patients for many years; and they have in-

formed him that general paresis is not common among such patients, although it does occur. Dr. Field said he regarded syphilis as a predisposing rather than a precipitating cause of general paresis. This is also true of alcohol. Maguin says that chronic alcoholism always terminates in dementia or general paresis. The Chinese are well known to be syphilitic—at least, those in this country; still, he has only observed one case of paresis among them. That case was a typical one: the patient imagined he had thousands of acres of land, thousands of dollars and thousands of wives—all white. The reports of the asylums in California show many cases of insanity among the Chinamen, but no form of paresis. In conclusion, Dr. Field referred to the change of type that seems to be occurring in dementia paralytica.

DR. JOSEPH COLLINS inquired on what grounds Dr. Fisher based the statement that in general paresis due to alcoholism or syphilis the somatic symptoms were supposed to be in the ascendancy over the mental? If such a statement be well founded, it is in contradiction to the other diseases due to these poisons, wherein mental symptoms are well marked. At the Medical Congress in Washington some years ago, Dr. Savage referred to a variety of paresis wherein the motor and somatic symptoms were apparently the only symptoms of the disease for quite a long time. Such a case, Dr. Collins said, is now under his observation. As regards the statement made by Dr. Peterson that cases of paresis are unknown in Egypt, Otto has recently reported fifteen cases of the disease in that country. So far as the relationship between syphilis and general paresis is concerned, Dr. Collins said he was very much in accord with the statements made by Dr. Peterson. His statistics correspond very closely with those of Jacobson, taken from the St. Hans Asylum in Denmark; and it appeared to him that such statistics could be relied upon. The patients in that institution came from within the narrow confines of the State; and Jacobson, in making up the statistics, ferreted out every possible etiological factor by inquiry regarding the patient's antecedents, friends, etc. The statement made by the French syphilographers, and also by Sternberg, of St. Hans Asylum, that there can be no general paresis without a history of syphilis is no longer worthy of credence. We have statistics galore at our command, and it is now time to draw such conclusions as can be drawn from figures. Dr. Peterson's statistics, taken from the Vanderbilt Clinic, are very valuable. The cases were seen early; they were apparently carefully studied, and are sufficient in number to draw conclusions from. We all admit that in about 60 per cent. of all cases of general paresis a history of syphilis, dating back from one to twenty years can be obtained. What we want to know is the way in which syphilis causes general paresis. In one of the specimens presented by Dr. Van Gieson this evening, a section taken from the brain of a general paretic, the microscope shows a large number of cells collected around a blood-vessel, with some of their protoplasmic prolongations destroyed or atrophied. In the early stages of general paresis there is vaso-motor disturbance, not only in the cortex of the brain, but throughout the whole body. Syphilis may act through its sinister manifestations on the blood-vessels. It causes a pathological condition that is favorable to the development of general paresis. If there are other attributing factors—and in nearly all cases there are—they

act as the torch to the pile that has already been prepared.

DR. PARSONS, in referring to the possible relationship between syphilis and general paresis, stated that so far as his observation and reading went, the tissue changes that occur in general paresis do not correspond with those that are produced by syphilis. Furthermore, we know that general paresis occurs in a certain number of cases in which there is no history of syphilis. His own studies of dementia paralytica have led him to think that the more immediate causes of the disease depend upon emotional conditions, or one might say congestion of the capillaries of the cortex due to over-exertion or over-stimulation of the nerve cells of the cortex. Syphilis sometimes causes a degeneration of the nerve tissue, but in opposition to this we observe that general paresis occurs usually during the most vigorous period of life. Dr. Parsons said that while he felt unwilling to make the statement that there is no possible relationship between syphilis and paresis, as cause and effect, such causative relation has not yet been proven.

DR. WILLIAM M. LESZYNSKY said that in those patients who have died from general paresis, it seemed to him that the pathological changes found in the brain were very much the same in those who gave a history of syphilis, and those in whom a specific history could be positively excluded. Dr. Hinckley, of the Essex County Asylum, at Newark, N. J., recently sent him some statistics in connection with this subject. The asylum has about 500 inmates. During the past eight or ten years, 15 cases of general paresis were received there. Of these, 13 were males, two females. In only two of these cases was a history of syphilis obtained, and in those there were no somatic manifestations of the disease. The causes given in the remaining 13 cases were alcoholism, overwork, anxiety, etc. In conclusion, Dr. Leszynsky said he agreed with Dr. Peterson in considering syphilis only as a predisposing factor in the production of general paresis.

DR. A. D. ROCKWELL referred to certain cases of general paresis that have come under his observation, in which the patients for temporary periods were extremely wretched, utterly disregarding all rules of tidiness and decency; these manifestations, after a number of weeks, passed away, and the patients became quite reasonable again.

DR. C. H. BROWN said he regarded general paresis as a disease of evolution; syphilis, alcoholism, sexual excesses, etc., were merely complications or predisposing factors. He also referred to the difficulty of getting a reliable history of syphilis in these cases.

DR. E. D. FISHER, in reply to Dr. Collins's question as to the ascendancy of the somatic over the mental symptoms in certain cases of general paresis, said he referred to those cases where we have extreme alcoholism or a recent history of syphilis. In such cases, too, we frequently have a more rapid response to treatment; however, they do not, as a rule, go on to complete recovery. While the old typical cases of general paresis are still the ones usually met with, yet anomalous cases are not infrequent. These, perhaps, in the past would not have been classed as general paresis. He agreed with Dr. Peterson in regarding syphilis simply as a predisposing factor. In cerebral syphilis we may have many symptoms similar to those of general paresis, but the disease does not run a similar course. Asylum reports on this subject must always

be regarded with more or less suspicion. In conclusion, Dr. Fisher referred to the futility of specific treatment in dementia paralytica.

DR. J. F. TERRIBERRY referred to the difficulty of properly classifying certain cases in which there is dementia and other symptoms of cortical degeneration.

DR. SACHS said that too much reliance should not be placed upon the value of statistics in connection with this subject. A few years ago the number of cases of tabes with a syphilitic history was placed at 87 per cent., and much lower than this by some authorities; now every one is agreed that the figures should have been as high as 92 per cent. We all admit the frequency of syphilis in general paresis, but the majority of the speakers have laid too little stress upon it as a predisposing cause; they refer to it as the lesser cause. The speaker said he did not agree with them in this. In other mental diseases in which heredity plays an important part, that factor is regarded as a predisposing cause, while an emotional element is regarded as the exciting cause, but the hereditary taint is certainly one hundred fold more important than the latter element. He is of the opinion that syphilis plays a more important rôle in general paresis than any other etiological factor. Other facts go to prove that syphilis plays a very important part in dementia paralytica. In probably every case of general paresis that has occurred in early life, that is, between the ages of fifteen and twenty-five years, there is a history of syphilis. The general impression seems to be that the specific history is one of long standing. While this is true in the majority of cases, it is not so always. A striking instance of this recently came under his observation. A young man of 22, while a student at Heidelberg, contracted syphilis: six months after infection he developed a typical general paresis, from which he is still suffering.

As regards the possible relationship between tabes and general paresis, Dr. Sachs said he has seen a number of cases in which the development of the two diseases rapidly followed each other. In one case the tabes developed nine months previous to the general paresis; in that case there was an undoubted history of syphilis. In one class of parietic patients the kneejerks are much exaggerated, while in another they are below the normal or entirely absent. In these latter cases the probability is that changes in the posterior columns have occurred closely related to the changes that are found there in posterior spinal sclerosis.

DR. PETERSON then closed the discussion. As regards the statement made by Dr. Collins about the cases of general paresis found in Egypt, Dr. Peterson said he has not seen the article by Otto referred to. Dr. Sandworth, the physician in charge of the asylum at Cairo, informed him that he had never seen a case of general paresis in a native Egyptian, nor had his predecessor, who was there for many years. The disease does occur among the Turkish officials in Egypt, but not among the natives.

With regard to Dr. Sachs's statement as to the relationship between tabes and general paresis, it is of course true that there are often tabetic symptoms in general paresis, and that the kneejerks may be absent. In the majority of cases, however, in which the kneejerks are absent in the early stage of the disease, they subsequently return and become exaggerated. Furthermore, no changes are found in the posterior columns after death from general paresis.

Recent Literature.

Reform in the Treatment of the Insane — Early History of the Retreat, York: Its Object and Influence, With a Report of the Celebrations of its Centenary. By D. HACK TUKE, M.D., LL.D. Pp. 96. London: J. and A. Churchill.

The volume before us contains an interesting but short account of the rise and growth of the now famous York Retreat and the work done there by several generations of the Tukes, from the pen of one of their number, himself an eminent alienist and writer on insanity and kindred subjects. The achievements of Samuel Tuke in England and Pinel in France form an epoch in history; and the reforms in the care and treatment of the insane by them instituted will rank with the highest efforts for the alleviation of human suffering. This small volume commemorative of the centennial of the York Retreat, may therefore properly stand as a fitting memorial of the inception of a great work for the amelioration of the insane, and thereby the good of mankind.

Psychopathia Sexualis, with especial reference to Contrary Sexual Instinct: A Medico-Legal Study. By DR. R. VON KRAFFT-EBING. Authorized translation by CHARLES G. CRADDOCK, M.D. Pp. 436. Philadelphia and London. 1893.

The alienist is often in much doubt regarding the status of certain distasteful cases which come to his notice in whom the sexual element is the chief, perhaps the only, feature. It is here that this work will be a decided help, for in it not only are the unmistakable cases of contrary sexual instinct given a practical classification, based upon an apparently sound pathology, but other less pronounced manifestations and syndromes of similar nature, generally held to be simply the expression of vice in its most revolting form, are here taken from their criminal setting and placed in the proper category of mental degeneration. At the same time the boundary line between sexual depravity and disease is kept well defined.

In the matter of treatment there is little advice given that is of practical value. The cases in which the author tried hypnotism do not seem to have been particularly successful, and his encouragement of marriage for such patients strikes us as reckless in the extreme and not warranted by the results.

It is unfortunate that such a book should be needed, albeit it is a masterly production and one that is thoroughly scientific in tone and method; for its circulation cannot, of course, be confined to medical readers. On the contrary, by translation the seven editions of the original are likely to be speedily duplicated and given a greater notoriety, owing to the pornographic interest on the part of the public.

Hypnotism, Mesmerism and the New Witchcraft. By ERNEST HART, formerly Surgeon to West London Hospital, etc. Pp. 182. New York: D. Appleton & Co. 1893.

The publication in book form of the papers on this subject by Mr. Hart which have appeared recently in the *British Medical Journal* and the *Nineteenth Century* is most welcome. They will do a good service in making easy of access a remarkably clear, concise and forcible exposition of much of the folly and humbug

connected with hypnotism, mesmerism, "animal magnetism," objects of psychical research, and "the occult" generally; although the author, in his impatience with credulity and imposture, is often unnecessarily severe in his strictures, and at times far too sweeping in his statements. It is refreshing to read such a fearless attack upon the hypnotic craze of to-day — we had almost said, yesterday. The subjection of research into psychical phenomena of all sorts to rigid control tests is not only here insisted upon, but has been practised also by the author to some purpose, notably in his exposure at great pains of the theatrical "hypnotic" performances in the wards of Dr. Luys at the Hôpital de la Charité. The "psychological researchers" are also not spared, and telepathy is shown to have "no more substantial foundation than mesmeric trance or clairvoyance, although the name sounds better to modern ears." The abuse and evil effects of hypnotism are graphically and convincingly set forth, and his estimate of its therapeutic value placed none too high. In fact, the limit he puts to its use is somewhat too restricted, but the author's experience and the extent of the folly will explain and excuse all.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S. A new American, from the thirteenth English edition. Edited by T. PICKERING PICK, Surgeon to St. George Hospital, etc. Philadelphia: Lea Brothers & Co. 1893.

This new edition is a decided improvement over all preceding ones. Gray's Anatomy has always been a favorite with students, and deservedly so, though precise anatomists have at times found a good deal to criticise. It has held itself rather aloof from modern methods of instruction of Continental origin. It has been very English. A change has been manifest in recent editions. The present one shows it more than ever. The book has become more comprehensive, but without the sacrifice of its characteristic merits. Of late American editions have had as an appendix Holden's "Laudmarks," edited by Dr. Keen. This is now done away with. Its place is more than taken by the sections on surface form and on surgical anatomy scattered throughout the book. Many new and excellent illustrations have been added. T. D.

The Diseases of the Male Organs of Generation. By W. H. A. JACOBSON, M.Ch., Oxon., F.R.C.S. Philadelphia: P. Blakiston, Son & Co. 1893.

In this work the author maintains the deservedly high place which he has won in medical literature.

The volume covers satisfactorily and thoroughly the ground indicated by its title — with the exception of some conditions of the prostate — to which shortcoming the writer himself draws attention in his preface.

The subject is divided into five parts, which treat respectively of the diseases of the testicle, of the cord, of the scrotum, of the vesicular seminales and of the penis.

In the first division, that part which relates to misplacements of the testis and the complications in connection therewith, presents in a concise and interesting manner, much useful knowledge of a kind hitherto not readily accessible.

Chapter VI (of Part I), which relates to tubercular disease of the testis and its appendages, is perhaps the most important contribution this volume contains. In it the author discusses the theories regarding the

channels by which infection of the epididymis and testis occurs; also the vexed question as to whether the disease is primary in these organs or secondary to tuberculosis in some other portion of the genito-urinary tract — his conclusion, with which we are in accord, being, that the epididymis is the most frequent primary seat of the disease. He also considers that the bacilli are carried principally by the blood-vessels, and in a less degree through the lymph-channels.

A short *résumé* is given of the evidence with respect to the occurrence of tuberculous infection by means of sexual contact.

The rare manifestation of the disease in the form of "galloping testicular tuberculosis" is well described.

In regard to the surgical treatment of the disease in these organs, the author strongly advocates incision — thorough curetting and antiseptic cleansing of all tubercular swellings of epididymis and testis — at any rate, and leans toward the side of the more radical operations by early excision of the affected parts, while recognizing that this is still an open question.

While writing of "Atonic Impotence," the author indorses the view of Professor Gross, to the effect that urethral stricture is a frequent result of masturbation. In this conclusion we do not concur, never having been able to satisfy ourselves of its truth during a long period of careful investigation with reference to this point.

We are unable to give a more extended account of the many excellent and valuable matters to be found in this book, but must be content to add, in concluding this notice, a word of praise for the admirable manner in which the work is illustrated as well as written, and to the fair-minded way in which the author has set forth the various theories bearing upon the more important parts of the subjects presented, while at the same time he has avoided that error into which the judicial mind sometimes falls, namely, that of lack of perspection, or of proportion with relation to their importance, of the matters presented.

The publishers have produced the book in a convenient size. The type is excellent, as are the other details for which they are responsible.

The work has the useful quality of not being beyond the reach of under-graduate students, while, at the same time, it meets the needs of the practising physician, and we take pleasure in cordially recommending it to the attention of both.

The Recrudescence of Leprosy, and its Causation. A popular treatise. By WM. TEBB. London, 1893.

In this book of 412 pages, the writer, a well-known lay opponent of the practice of vaccination, attempts to show that the spread of leprosy is owing to a great and unrecognized degree, to compulsory arm-to-arm vaccination as a preventive of small-pox. It is simply an amplification, after much travel and considerable study, of a previous brochure on the same subject that has already been noticed in these columns. Mr. Tebb has visited the West Indies, British Guiana, Venezuela, Norway, California, the Sandwich Islands, Ceylon, Egypt, New Zealand, Cape Colony and Natal; together with most of the colonies in Australia; and his book is mainly composed of quotations from journals and medical writings, together with an account of some conversations with superintendents of asylums and other people whom he met in his travels. The mass of evidence and cases collected is very large, and, if carefully sifted, may prove of value to the student

of this disease; but it cannot be said that the writer has gone very far towards proving his case. It is not for an instant to be doubted that both syphilis and leprosy have been inoculated by vaccination, and that the greatest care should always be taken to avoid impurity of lymph; but that this procedure is in great measure responsible for the existence of leprosy no sufficient proof is given. Many of the cases cited in favor of this view are loosely reported, and are utterly inadmissible as evidence on either side. Some few of the cases point to vaccination as a probable cause. The mass of statistics and material is introduced without order or critical comment, and little attempt is made to discriminate between skilled and ignorant observers. The book bears the mark of one little versed in scientific research, and is colored throughout by the writer's obstinate antagonism to one of the greatest boons ever conferred upon humanity. The writer's honesty and zeal, however, are certainly to be respected, and the amount of time spent in travelling in search of information must have been very great. The book will not have been written in vain if it causes a greater degree of caution to be taken in communities (as the Sandwich Islands, for instance) where it seems probable that careless and improper vaccination has been the source of disseminating disease; but the attainment of the writer's aim, namely, the utter suppression of vaccination and the abolition of all attempts at experimental therapeutics in leprosy, can only be regarded in the light of a great calamity.

An Introduction to the Study of Diseases of the Skin.

By P. H. PYE-SMITH, M.D., F.R.S. Philadelphia: Lea Brothers. 1893.

This book has been compiled from the chapters on diseases of the skin which were written in 1886 to complete the late Dr. Hilton Fagge's work on medicine, together with several papers that have appeared in "Guy's Hospital Reports" and the "Pathological or Clinical Transactions." The author has had abundant opportunities for observing skin diseases, having been in charge of the department for cutaneous diseases in Guy's Hospital for a series of years, and has "tried to make his description an epitome of what he has himself observed." The book is interesting, as setting forth the views and experience of a leading London practitioner who has devoted considerable time to the study of dermatology.

The Medical Student's Manual of Chemistry. By R.

A. WITTHAUS, A.M., M.D., Professor of Chemistry and Physics in the University of the City of New York, etc. Fourth edition. New York: William Wood & Co. 1893.

A book which is so favorably known as this one is does not need extended comment. In the present edition no important changes have been made in that part of the work which is devoted to inorganic chemistry. The part treating of the chemistry of the carbon compounds has been extended by about twenty pages, and the text in great part rewritten. The organic compounds are classified, as in previous editions, according to their constitution so far as is known, and those alkalis whose molecular structure has been completely or partially determined, occupy in the present edition their proper places in the classification. We consider the book one of the best text-books on chemistry for students of medicine.

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VACCINATION AND REVACCINATION.

THE rarity of small-pox in Massachusetts during the past dozen years or more has been such that scarcely one in ten of the physicians now in active practice has ever seen a case of the disease. Hence the difficulty of diagnosis which very frequently happens when cases do occur, or when other diseases simulating small-pox are met with in the practice of young physicians who have entered upon the duties of their profession since the epidemic of 1872-73. There is no reason to suppose that the remarkable immunity which our population has had the good fortune to enjoy for several years will be indefinitely prolonged, since an unvaccinated population, consisting both of immigrants and of unvaccinated infants born since the last epidemic, is likely to furnish the combustible material for a future epidemic, whenever the disease gains a foothold among us.

Fortunately, we have a sure preventive, in vaccination and revaccination, when thoroughly and properly performed under the supervision of an intelligent physician or sanitary officer. With abundant resources in the shape of plentiful supplies of lymph, obtained by calf-vaccination, there can be no excuse on the part of local sanitary authorities for neglecting this important preventive measure.

The present outbreak is by no means confined to Boston. Emigrant ships arriving at United States sea-ports have brought small-pox to this country many times during 1893, from crowded cities where this disease is almost constantly occurring in Europe. Outbreaks have occurred in many Western cities during the year; and with the present facilities of intercourse by rail and by steamer, the spread of small-pox is rendered much more certain than it was in earlier times. A recent summary of the deaths from small-pox in Massachusetts during the past twenty years, shows that, out of the 161 towns in which these deaths occurred (mostly in 1872-73) only eight were not directly on some line of railway communication at the time when the death occurred.

During the year just closed, there have been 678 cases of small-pox in the city of Reading, Pa., a city having scarcely one-eighth as many inhabitants as Boston.

While it is true that single cases are liable to occur anywhere, as in the case of unvaccinated immigrants, it is also true that extensive and widespread outbreaks following such first cases, can only occur in places where the preventive measures of vaccination, notification, isolation and disinfection are neglected.

The importance of revaccination is also apt to be underestimated; but the history of those countries where revaccination has been thoroughly enforced places the value of this measure beyond a doubt. An illustration of the value of revaccination is shown in the case of Germany since the law of 1874 went into operation. By the provisions of this law every infant must be vaccinated, and in addition every scholar in public and in private schools must be revaccinated at the age of twelve years. The provisions of this law have been so thoroughly carried out that, as a consequence, Germany has enjoyed an immunity from small-pox far exceeding that of any of the contiguous countries, particularly Austria, Russia and France.

In support of this statement the following figures are presented from Dr. Sykes's "Public Health Problems," London:

MORTALITY FROM SMALL-POX PER 100,000 LIVING.

	Pruss'n Army.	Austri'n Army.	Austria.	Prussia.	Berlin.	London.	Vienna.
1870	33.32	17.28	35.18	17.52	22.37	30.20	44.71
1871	27.67	40.1	30.30	213.21	632.56	242.16	71.90
1872	5.65	101.4	189.99	262.37	132.61	53.46	536.98
1873	2.68	106.0	223.36	33.65	11.21	3.55	224.50
1874	0.33	67.0	176.18	9.52	2.47	1.66	136.26
Revaccination compulsory.							
1875	0.0	21.5	57.73	3.60	5.19	1.32	113.50
1876	0.0	10.4	39.28	3.44	1.81	20.80	187.49
1877	0.0	25.5	16.91	0.34	0.40	70.98	84.01
1878	0.0	15.4	5.57	0.71	0.78	38.41	75.91
1879	0.0	22.7	50.88	1.26	0.75	12.18	46.91
1880	0.0		81.27	2.60	0.81	12.50	73.52
1881	0.0		78.10	3.82	4.74	61.91	122.95
1882	0.0			3.64	0.13	11.07	104.29
1883	0.0			4.00	0.33	3.00	9.6

These figures show that Prussia, although exposed to constant danger from small-pox, upon its Russian and Austrian borders, has been enabled to reduce its small-pox mortality to exceedingly low terms by means of vaccination and revaccination; and the Prussian army, which constitutes a very large portion of the population, has, with the exception of a single death in 1885, been absolutely exempt from deaths from small-pox.

The effects of vaccination and revaccination upon the attack-rate, and the death-rate from small-pox, during an epidemic in a large city, are well illustrated by the admirable report of Dr. Barry upon the epidemic of 1887-88 in the city of Sheffield, England. The following were the attack- and death-rates per 1,000 of the population at each of the two age periods, children under ten years and persons over ten years of age:

	Unvaccinated.	Once Vaccinated.	Twice Vaccinated.	
Under ten,	101	5.	0	} Attack-Rate.
Over ten,	94	19.	3.	
Under ten,	44	0.09	0	} Death-Rate.
Over ten,	51	1.	0.08	

These figures may be summarized as follows: "The children vaccinated had, as compared with the unvaccinated, a 20-fold immunity from attack, and a 480-fold security against death from small-pox; the persons over ten years of age, once vaccinated, had a 5-fold immunity against attack, and a 51-fold security against death; and the twice vaccinated, a 31-fold immunity from attack, and a 640-fold security against death."

In commenting further upon the significance of these figures, which are the result of a most careful house-to-house canvass in a city of about 200,000 inhabitants, Dr. Sykes says:

"We may conclude, therefore, that natural insusceptibility to small-pox practically does not exist, that the contagion is so far-reaching, so readily attacks indiscriminately the unprotected, and is so fatal, that in a community, *entirely* unprotected, either by previous small-pox, inoculation or vaccination, an epidemic causes an enormous mortality; that the disease leaves the survivors disfigured, maimed or weakly, but protected more or less against future attacks, so that the disease continues to fall only upon the unprotected, namely, the newly born and infant population, the few survivors of which remain protected for a number of years.

"Vaccination protects the infant and the young population in proportion to the number vaccinated, and the quality and quantity of the vaccination marks; but the protective influence of vaccination fades sooner than that of an attack of the disease, so that in later years susceptibility to small-pox returns. Revaccination compensates for the less duration of immunity, and practically brings artificial immunity to a protective level equal to a previous attack of the disease, so that periodical revaccination almost entirely averts small-pox."

The first law in Massachusetts in regard to small-pox was enacted in 1809, and provided for the inoculation of the inhabitants with the cow-pox, under the direction of the town boards of health, or of a committee chosen for the purpose. The present law provides that parents and guardians shall cause their children and wards to be vaccinated before they attain the age of two years, and revaccinated whenever the town authorities shall, after five years from the last vaccination, require it. The town authorities shall also require and enforce the vaccination and revaccination of all inhabitants when the public health requires it. The penalty for neglecting to comply with these provisions is five dollars. Towns shall furnish means for vaccination to those who cannot pay for it. Incorporated manufacturing companies, and superintendents of public institutions, are required to see that the inmates of such institutions are vaccinated. Towns may make further provisions for vaccination, under the direction

of the board of health or of a committee chosen for the purpose. School committees are required to exclude unvaccinated children from the public schools.

Practically much of this law is a dead letter. The last clause is the most efficient part of the law. As a matter of fact, there is to-day a large unprotected population in Massachusetts, made up partly of unvaccinated immigrants and partly of unvaccinated native-born Americans. The same conditions obtain probably to a greater extent in other States.

The degree of protection afforded by a primary and secondary vaccination may be estimated in some measure by the size and character of the scars. It is impossible to formulate a positive rule as to the period of protection acquired by any given individual. Revaccination, if properly done upon a subject neither very old nor very feeble, is a small penalty to pay for immunity. If it does not take, the individual has the assurance of probable immunity and no harm is done; if it does take, there is at once the evidence of its necessity and the assurance of reacquired safety. Although there is now no epidemic of small-pox in any part of New England, the present conditions are such and so widespread as to indicate to thoughtful and intelligent people the desirability of vaccination and revaccination.

NAIL BITING.

A FRENCH scientist and surgeon, Berillon, has just issued a brochure on "Finger-Nail Biting" (*onychophagie*), containing the results of a series of observations in the public and private schools of France and extending through a period of more than seven years.

His observations lead him to pronounce the habit far more widespread and pernicious than would be imagined, and force him to conclude that, if not a disease itself, it is an unfailing mark of incipient degeneration of the nervous system, which, if unrecognized, may be productive of the most evil results.

In a mixed school of the Department of l'Yonne, the report showed the following results:

	Number Examined.	Nail Biters.
Twelve to fourteen years, . . .	13	7
Thirteen to fifteen years, . . .	16	6
Fifteen to seventeen years, . . .	18	3

From twelve to fourteen seems from this to be the age most susceptible to the habit. A like experiment with girls shows them to be even more susceptible at this age.

	Number Examined.	Nail Biters.
Ten to thirteen years, . . .	80	27
Twelve to fifteen years, . . .	75	21
Fifteen to sixteen years, . . .	52	13
Sixteen to seventeen years, . . .	10	2

In all the schools where the children have been the objects of careful and attentive observation, the reports have agreed in pronouncing that pupils observed to have the habit are universally the poorest students; that if boys, they are inclined to effeminacy, and if girls, to slackness. In many, there are marked defects of character and less sustained attention.

Berillon's careful inquiries elicit the fact that nail biting is not to be looked at merely as a child's habit, unpleasant and punishable, but as a direct and positive indication of hereditary physical degeneration. So marked is this, that he has found no families in which nail biting has been observed to be general whose head has not been either an alcoholic, an unbridled gambler, a convulsive, a feeble-minded person, a lunatic, a criminal or a consumptive.

In such families the hereditary degeneration is to be observed, unhappily, in more than nail biting. Often the heads of such children present species of deformation, such as microcephalus, bony crests and protuberances on different parts of the head, while the face reveals crossed eyes, near-sightedness, irregular teeth or displacement of the features. At this point, reversing the inquiry, Berillon gave his attention to a large class of nervous patients in the Paris hospitals and found that a considerable proportion of the children of these show the habit of nail biting, with other signs of physical degeneration.

Berillon thinks his experiments prove that nail biting as a habit in children has its source deeper than mere imitation or childish idiosyncrasy. He regards it as no wilful habit to be cured by ordinary petty punishment, but an indication of an incipient degeneration of the nervous system, which, once observed, may be treated understandingly at its very beginning. The outward habit, if it does not disappear when the cause is removed, will yield to ordinary treatment.

While M. Berillon's statistics are interesting, we do not feel that such unhappy conclusions are wholly warranted from his cases. School-children, especially girls, eat chalk and slate-pencils, and pass at a certain age through a condition which might be called "philopickle-lime-phagia"; and we think that a child may bite its nails without danger of passing to a state of idiocy. On the other hand, we can recall some nail biters who had been blessed with very intelligent and estimable progenitors.

CONTAGIOUS DISEASES IN PUBLIC SCHOOLS.

DR. MOREAU MORRIS has made a report to the Board of Health of the City of New York in regard to the spread of diphtheria and other contagious diseases among the children in the public schools. He found that it was the custom in all the schools that he visited for the scholars to use slates and pencils in common, these articles being kept in baskets from which they help themselves indiscriminately. The habit children have of putting their pencils in their mouths and of cleaning their slates with saliva is well-known, and the reporter suggests, as has been before suggested, that disease is frequently conveyed by this agency. It is therefore recommended that the use of slates be discontinued altogether, that all books which have been used by sick children should be destroyed, and that school-books should be covered with hard paper instead of muslin, as is now done, on account of the liability of the latter to retain disease germs.

MEDICAL NOTES.

A PHYSICIAN IN THE ITALIAN CABINET.—Dr. Baccelli, Professor of Clinical Medicine at the University in Rome, and President of the Royal Academy of Medicine, has been made Minister of Public Instruction in the new Italian Cabinet.

DEATH AT AN ADVANCED AGE.—James Morris, a negro, died at Lyons, N. Y., last week at the age of one hundred and twenty-one years. He was born in slavery in Delaware, and his age was authenticated by the family records. It is not stated whether he ever saw George Washington.

A VINDICATION OF DARWINISM.—A man was recently arrested in Central Park, New York, for assaulting a monkey in one of the cages because it made up faces at him.

AN OPPORTUNITY FOR A PHYSICIAN.—The *Medical News* prints the following advertisement, which appeared in the *Philadelphia Press* of December 11, 1893, "as another illustration of the mercantile demands for and uses of physicians":

WANTED.—A Physician to travel with medicine company to lecture; experience not necessary: prefer one who can play organ; a steady, pleasant and lucrative position offered. Address, etc.

THE IOWA BOARD OF MEDICAL EXAMINERS.—This board has ordered that on and after July 4, 1898, no medical school shall be considered as of "good standing," for the purposes of registration of its alumni within the State, unless it has a four-course curriculum. Each course of attendance upon medical lectures must be not less than six months long, but two courses in the same year will not be counted for two full courses.

A PEASANT'S IDEA OF THE CHOLERA.—Two Russian peasants in Tomsk were recently sentenced to imprisonment for the murder of a woman whom they had "taken for the cholera." A quarantine had been established in their town against the cholera in the neighborhood. On the morning of the murder the peasant woman had come to town, but was turned back at the outpost. Soon afterwards the two men left the village; and in a short time gunshots were heard near by. One of the men on trial said later in the day to his neighbors: "Pray to God. We have killed the cholera: It is dressed like a woman above the waist and like a man below." The men were convicted, and sent to jail for three years.

MEDICAL MARTYRS.—Commenting on the deaths of medical men from diphtheria recently recorded in the *British Medical Journal*, the *St. Petersburg medicinische Wochenschrift* says such occurrences are by no means rare in Russia. Within the last few weeks two practitioners of Sengilei in the Simbirsk Government, M.M. Radsiminski and Chrenow, have died of diphtheria contracted from patients under their care. Two young Parisian physicians have died this autumn from diphtheria taken from a patient.

LOOKING AFTER BARBERS AND HAIRDRESSERS.—The Government of the Republic of Colombia in

view of the possibility of contagious diseases, such as ringworm, favus and syphilis, being transmitted by combs, brushes, etc., has passed an enactment making it compulsory for all barbers and hairdressers to keep the instruments of their art clean, and to disinfect them every time they have been used.

BOSTON AND NEW ENGLAND.

SMALL-POX IN BOSTON.—Only one new case of small-pox has occurred the last week. The patient is a man living in the same tenement-house in which the first group of cases occurred at the South End. There are now fifteen patients in the hospital.

A NEW EMERGENCY HOSPITAL IN BOSTON.—A new Emergency Hospital, to cost about a hundred thousand dollars, is to be built by the friends and trustees of Tufts College; and the clinical advantages are to be given wholly and exclusively to the students of the Tufts Medical School.

ILLEGAL USE OF PHARMACY CERTIFICATES.—The first cases under the new law of last June by which the State Board of Registration has power to suspend any person's registration as a pharmacist, and his certificate, for such term as may be deemed fitting, and in flagrant cases to revoke the certificate, occurred last week. All three holders were charged with letting out their certificates to unqualified persons. The charges were proven, and one certificate was revoked and the other two suspended.

REPORT OF THE CHILDREN'S HOSPITAL.—The report of the managers of the Children's Hospital in Boston for the year 1893 says: "The year, just closed, has been an unusually busy one in all the departments and the results have been most successful and satisfactory. At the beginning of the year there were in the wards 41 patients; treated during the year, 295 boys and 287 girls. In addition, 2,071 new cases have been cared for in the out-patient department. Most of the patients admitted to the wards have been free patients." The Board of Officers elected is the same as last year with the exception of Mr. Oliver Ames 2d, who succeeds to his father's place.

THE SCHOOL FOR THE BLIND.—The sixty-second annual report of the trustees of the Perkins Institute and Massachusetts School for the Blind shows that there are now 287 blind persons connected with the establishment. The financial record shows a balance of \$8,248.

FREE VACCINATION IN BOSTON.—The appropriation of \$5,000 for free vaccination has been exhausted; but the Mayor, in view of the satisfactory working of the public inoculation, has authorized the continuance of the work, and has told the Board of Health that the money expended will be granted when the work is completed. The number of persons vaccinated increased each day last week from 1,000 on the first Monday to over 4,000 on Saturday, a total of over 20,000 for the week.

SMALL-POX PRECAUTIONS IN CAMBRIDGE.—The Board of Health of Cambridge has opened public stations for free vaccination, and has secured from the City Council the sum of \$5,000 with which to build a hospital for contagious diseases. During the cholera scare a year ago the Board petitioned the City Council for \$4,500 for this purpose, but the appropriation was not given.

INFLUENZA AT SEA.—One of the steamers from Boston to New York reports that on her last voyage she was signalled from the Vineyard Sound Lightship, that most of the crew were sick with the grip, and in need of medical attendance. A steamer was sent from New Bedford with a physician.

NEW YORK.

INFLUENZA.—On December 18th it was reported that there were more than five hundred cases of grip at Dunkirk, N. Y., and three deaths had occurred.

SOFT COAL.—For some time past complaints have been made of the increasing use of soft coal by various manufacturing establishments in the city, by reason of which the atmosphere is contaminated by bituminous smoke; and the Board of Health has now issued peremptory orders that the nuisance shall be abated.

A BULLET IN THE SKULL FOR SIXTEEN MONTHS.—A case of unusual interest has recently occurred at St. Luke's Hospital. On November 21st a male patient, thirty-one years of age, was admitted suffering from severe spinal trouble, who stated that fifteen months before he had shot himself in the back of the neck with a pistol. On December 20th he died, and the bullet was found imbedded in the base of the skull. The cause of death was found to be pressure on the spinal-cord from vertebral dislocation, together with spinal meningitis, which were produced by the ball, which had remained in the body for sixteen months.

A LION ON AN OPERATING-TABLE.—At the New York College of Veterinary Surgeons, on December 29th, the operation of setting and dressing the fractured femur of a lion from one of the down-town museums was successfully accomplished. The lion was kept quiet by a hypodermic injection of morphine.

DEATH FROM A SPIDER'S BITE.—While engaged in helping to put up the Christmas decorations in the Episcopal Church at Sparkhill, on the Hudson, a young woman was bitten on the cheek by a spider which had been brought in on the greens, and in a few days death resulted from septicæmia.

APPOINTMENTS TO THE STATE BOARD OF HEALTH.—Governor Flower has appointed as members of the State Board of Health Dr. John Edwards, of Gloversville, to succeed Dr. Dawes, of Saugerties, and Dr. Murray M. Adams, of Watertown, in the place of Professor Perkins.

MORTALITY.—During the week ending December 23d, the number of deaths reported in the city was 818, which is an increase of 43 over the mortality of

the previous week, and 11 above the average for the corresponding weeks of the past five years, and which represents an annual death-rate of 22.19 per thousand of the estimated population. During the week there were 166 deaths from pneumonia, an increase of 33, and six deaths from influenza, against three during the week ending December 16th. During the week ending December 30th the number of deaths from influenza increased to 14, but the deaths from pneumonia showed a decrease of 22. The total number of deaths for the week was 824, which is 21 less than the average of the corresponding weeks during the past five years. This represents an annual death-rate of 22.34, against 22.91 for the same week since 1886. There were 637 cases and 88 deaths reported from contagious diseases, against 599 cases and 78 deaths in the week ending December 23d.

THE VITAL STATISTICS FOR 1893.—During the year 1883 there were reported 51,516 births, 16,144 marriages and 44,370 deaths in the city. In 1892 the figures were, respectively, 49,447, 16,001 and 44,329. The death-rate for 1893, estimated on a population of 1,827,396, was 23.46, which is the smallest ever recorded; the lowest previous death-rate having been 23.65, in the year 1877. The number of deaths from some of the principal diseases in 1893 were as follows: influenza, 220 (495 in 1892); small-pox, 100; measles, 387; scarlet fever, 531; diphtheria, 1,962; whooping-cough, 340; typhoid fever, 380; typhus fever, 201; diarrhoeal diseases, 3,314; cardiac disease, 2,376; bronchitis, 1,569; pneumonia, 6,476 (635 more than in 1892); consumption, 5,101 (5,033 in 1892); sun-stroke, 43 (against 320 in 1892).

APPROPRIATION FOR CHARITIES AND CORRECTION.—For the year 1894, the Board of Estimate and Apportionment has allowed \$2,295,675 and \$425,080 for the expenses of the Departments of Charities and Correction. For 1893, the appropriations were, respectively, \$2,223,425 and \$470,239.

HOSPITAL SATURDAY AND SUNDAY ASSOCIATION.—As December 30th and 31st were both snowy days, it is to be feared that the annual collection of the Hospital Saturday and Sunday Association will prove smaller than usual this year. In its appeal to the public for liberal contributions for the hospitals the Association states that it has been found that, through the obliteration of old methods of individual competition by the establishment of large corporations and trusts in modern times, the income of rich charitable institutions as are supported by the individual gifts of the benevolent has been seriously affected.

REPORT OF THE STATE BOARD OF HEALTH.—The bulletin of the State Board of Health for the month of November, issued December 30th, shows that the reported mortality has further decreased from the low daily average of 290 in October to one of 281, which is the same as that of November, 1892. This is uniformly the healthiest month in the State of New York, the number of deaths per day being less during

November by 25 than the daily average for the past eight years. Compared with November, 1892, the zymotic mortality, and also the infant mortality, is lower; both are also lower than during the month of October. Typhoid fever caused the same number of deaths as in November, 1892, and 75 fewer deaths than in October. Scarlet fever continues, with little change, to be less prevalent than last year. There is an increase in measles since October, chiefly in New York City. Diphtheria caused about the same number of deaths as in last November. The death-rate for the month from all causes is 15.35, against 15.83 in October.

Miscellany.

THE CHANGES IN THE PHARMACOPŒIA.

THE new pharmacopœia of 1890 became official this week. For the convenience of our readers we give a list of the new remedies which are now official as well as of those which are no longer recognized. Certain changes in official nomenclature are important for correct usage in the future. There are eighty-eight new articles, and ninety have been omitted.

The newly-adopted articles are the following:

Acetanilidum, acidum hypophosphorosum dilutum, acidum stearicum, adeps lanæ hydrosus, alcohol absolutum, alcohol deodoratum, aloë barbadensis, aloinum, aqua aurantii florum (diluted), aqua chloroformi, aqua hydrogenii dioxidi, aqua rosæ (diluted), aspidosperma, barii dioxidum, caffeina citrata, caffeina citrata effervescens, calcii sulphas exsiccatus, cinnamomum saigonum, cocainæ hydrochloras, convallaria, elastica, elixir aromaticum, elixir phosphori, eriodictyon, eucalyptol, extractum apocyni fluidum, extractum asclepiadis fluidum, extractum aspidospermatis fluidum, extractum cimicifugæ, extractum convallariæ fluidum, extractum eriodictyli fluidum, extractum jalapæ, extractum lappæ fluidum, extractum menispermii fluidum, extractum phytolacæ fluidum, extractum rhamni purshianæ fluidum, extractum scoparii fluidum, extractum uvæ ursi, extractum viburni opuli fluidum, ferri et quiniæ citras solubilis, glyceritum acidi carbolici, glyceritum acidi tannici, glyceritum boroglycerini, glyceritum hydrastis, hydrastinæ hydrochloras, hyoscine hydrobromas, hyoscyaminæ hydrobromas, lithii citras effervescens, menthol, methyl salicylas, naphthalinum, naphthol, oleatum zinci, oleum betulæ volatile, oleum cadinum, oleum terebinthinæ rectificatum, pancreatinum, paraldehydum, pepsinum, petrolatum liquidum, petrolatum spissum, physostigminæ sulphas, pilulæ catharticæ vegetabiles, pilulæ ferri carbonatis, potassii citras effervescens, pryogallol, resorcinum, rhamnus purshiana, salol, sodii nitris, sparteinæ sulphas, spiritus amygdalæ amaræ, spiritus aurantii compositus, spiritus glonoini, spiritus phosphori, strontii bromidum, strontii iodidum, strontii lactas, strophanthus, suppositoria glycerini, terebenum, terpini hydras, tinctura lactucarii, tinctura quillajæ, tinctura strophanthi, trochisci santonini, viburnum opulus, zea.

The articles dismissed are:

Abstractum aconiti, abstractum belladonnæ, abstractum conii, abstractum digitalis, abstractum hyoscyami, abstractum ignatiæ, abstractum jalapæ, abstractum nucis vomicæ, abstractum podophylli, abstractum senegæ, abstractum valerianæ, acetum lobeliæ, acetum sanguinaris, æther, ammonii phosphas, ammonii sulphas, amylium iodatum, aurantii flores, azederach, cannabis Americana, ceratum extracti cantharidis, ceratum sabine, charta cantharidis, chinoidinum, chloroformum venale, chinecona flava, cornus, cupri acetas, cydonium, elixir aurantii, emplastrum ammoniaci, emplastrum asafoetide, emplastrum galbani, emplastrum picis canadensis, extractum cornus fluidum, extractum lactucarii fluidum, extractum mali, extractum mezerel, fel bovis inspissatum, ferri oxalas, galbanum, gaultheria, gutta-percha, hydrargyri sulphidum rubrum, ignatia, infusum brayeræ, juniperus, lavandula, linimentum cantharidis, linimentum plumbi subacetatis, liquor ferri et quiniæ citratis, liquor gutta-perchæ, liquor pepsini, magnesii sulphas, magnolia, maltum, mistura magnesæ et asafoetide, mistura potassii citratis, mucilago cydonii, oleum lavandulæ, oleum ruta, oleum succini, oleum valerianæ, origanum, pilulæ ferri

compositæ, pillulæ galbani compositæ, pix canadensis, potassii sulphis, potassii tartaras, prinos, rosmarinus, salix, sodii bicarbonas venalis, sodii santoninas, spiritus odoratus, syrupus ferri bromidi, syrupus limonis, thuja, tinctura conii, tinctura ferri acetatis, tinctura ignatiæ, trochisci magnesie, trochisci sodii santoninatis, unguentum acidi gallici, unguentum mezerel, unguentum sulphuris alkalinum, ustilago, vinum album fortias, vinum aloes, vinum aromaticum, vinum rhei, viola tricolor.

CHANGES IN OFFICIAL LATIN TITLES.

PHARMACOPŒIA, 1890.

Acidum arsenosum
Æther fortior
Aloe
Alumini hydras
Alumini sulphas
Aqua aurantii forum
Aqua creasoti
Aqua roseæ
Arsenii iodidum
Brayera
Chloroformum purificatum
Cinnamomum

Collodium cum cantharide
Creasotum
Erythroxylon
Emplastrum picis cum cantharide
Extractum aloes aquosum
Extractum belladonnæ alcohol-
leum
Extractum belladonnæ fluidum

Extractum brayeræ fluidum
Extractum conii alcoholleum
Extractum hyoscyami alcohol-
leum
Extractum sarsaparillæ composi-
tum fluidum
Extractum stramonii
Extractum stramonii fluidum

Extractum viburni fluidum

Ferri phosphas
Ferri pyrophosphas
Ferri sulphas præcipitatus
Gossypium
Hydrargyri iodidum viride
Liquor acidi arseniosi
Liquor sodii arseniatis
Magnesi citras granulatus
Manganii oxidum nigrum
Mistura ammoniaci
Mistura amygdalæ
Mistura asafetide
Mistura chloroformi
Mistura ferri et ammonii acetatis
Oleum bergamii
Oleum theobromæ
Opium denarcotisatum
Petrolatum

Phytolacæ bacca
Piperina
Quillaja
Sapo viridis
Sodii arsenias
Tinctura belladonnæ
Tinctura colchici
Tinctura opii deodorata
Tinctura saponis viridis
Tinctura stramonii
Viburnum

PHARMACOPŒIA, 1890.

Acidum arsenosum
Æther
Aloe scotrina
Alumini hydras
Alumini sulphas
Aqua aurantii forum fortior
Aqua creasoti
Aqua roseæ fortior
Arsenii iodidum
Cusco
Chloroformum
{ Cinnamomum casia
{ Cinnamomum zeylanicum
Collodium cantharidatum
Creasotum
{ Coca
Emplastrum picis cantharidatum
Extractum aloes
Extractum belladonnæ foliorum
alcoholleum
Extractum belladonnæ radicle
fluidum
Extractum cusco fluidum
Extractum conii
Extractum hyoscyami

Extractum sarsaparillæ fluidum
compositum
Extractum stramonii seminis
fluidum
Extractum stramonii seminis
fluidum
Extractum viburni prunifolii
fluidum
Ferri phosphas solubilis
Ferri pyrophosphas solubilis
Ferri sulphus granulatus
Gossypium purificatum
Hydrargyri iodidum flavum
Liquor acidi arseniosi
Liquor arseni et hydrargyri
Liquor sodii arseniatis iodidi
Magnesi citras effervescentes
Manganii dioxidum
Emulsum ammoniaci
Emulsum amygdalæ
Emulsum asafetide
Emulsum chloroformi
Liquor ferri et ammonii acetatis
Oleum bergamotte
Oleum theobromatis
Opium deodoratum
{ Petrolatum molle
{ Petrolatum spissum
Phytolacæ fructus
Piperinum
Quillaja
Sapo mollis
Sodii arsenias
Tinctura belladonnæ foliorum
Tinctura colchici seminis
Tinctura opii deodorati
Tinctura saponis mollis
Tinctura stramonii seminis
Viburnum prunifolium

The figures are taken from the records of the Edinburgh Dispensary from July, 1886, to December, 1891.

"Insusceptibility."—No case occurred in which an infant was found insusceptible to vaccination by the arm-to-arm method. **Repetitions.**—Sixty-one cases required the vaccination to be repeated, owing to want of success on the first occasion. **Erysipelas.**—Seven cases of this dangerous accident occurred, and in almost every case the dwelling-house of the family was found to be damp or otherwise unhealthy. **Suppuration of Lymphatic Glands.**—This complication of vaccination also occurred seven times out of 5,866 cases. **Syphilis.**—There was no case of syphilitic infection. **Deaths.**—Two deaths resulted from the complications of vaccination—one from erysipelas, the other from blood poisoning following the suppuration of a lymphatic gland in the axilla. Both deaths took place about three weeks after the operation. **Revaccinations.**—Only 45 revaccinations were performed. The large proportion of these were on boys between the ages of twelve and fourteen, employed at the General Post-office. Among the laboring classes few came to the dispensary to be revaccinated, and these only when compelled by their employers. It would be much to the advantage of the community were revaccination made compulsory."

BLOOD PRESSURE IN DIPHTHERIA.

THE appalling rapidity with which death may follow the first clinical evidence of heart paralysis in diphtheria has led Friedemann¹ to experiment upon a series of cases to determine whether sphygmomanometric measuring of the blood pressure could give the physician an earlier warning of the cardiac poisoning, especially in children. Sixty-three cases were studied, in all the measurements were taken upon the radial artery and when the child was in a recumbent position and, if possible, during sleep. His results were as follows: The most favorable prognosis was for such cases as showed at no time any variation in the pressure, more than the slight rise and fall which was noted in nearly every case, and which, when not over five or ten millimetres of mercury, was of no moment. The second class of cases, which, though they ended in recovery after a longer or shorter time, gave the physician much anxiety, were those in which there was a continued fall of pressure. So long as the manometer did not fall below seventy-five to ninety millimetres of mercury (according to the age and size of the child), the prognosis was still fair. A lower pressure than seventy-five millimetres was considered serious and a pressure of less than sixty-five was almost invariably cause for a fatal prognosis. Twenty-six cases at one time or another showed an abnormally low pressure, seventy millimetres or less, Hg. Fifteen of these showed a sudden dangerous fall within the first week, and of these fifteen only two recovered, death in the other cases occurring within seven days. In the remaining twelve cases which first showed a fall of blood pressure after the first week of illness, five recovered and seven died within eight days afterwards. The general result of the observations was that a regularly-recorded measure of the blood pressure gave the earliest warning of approaching danger, which often was not shown by clinical signs until later.

¹ Jahrbuch. f. Kinderheilkunde, xxxvi, p. 50; Centralblatt f. med. Wissenschaften, 1893, p. 48.

SOME VACCINATION STATISTICS.

THE present outbreak of small-pox in Boston would undoubtedly cause but little alarm were it not for the fact that the complete freedom from the disease for the last twenty years has resulted in a widespread carelessness regarding vaccination. Nearly a whole generation has grown up since the last epidemic, and a surprisingly large number of these young people have not been vaccinated. The increase in foreign immigration has been large, and comparatively few of this class of people seek vaccination under less stimulus than fear.

Some statistics of vaccination of 5,866 cases recently published by Mr. Francis Cadell in the Edinburgh *Medical Journal* are of especial interest at this time.

Correspondence.

"SENDING PATIENTS AWAY FROM HOME."

1517. STOUT ST., DENVER, COL.,
December 27, 1893.

MR. EDITOR:—In connection with Dr. Knight's paper in a recent issue (December 21, 1893), I wish to call attention once more to a matter which needs to be mentioned frequently. I refer to a habit that some physicians, no doubt actuated by a mistaken kindness to the patient, have of stating to the patient about starting for Colorado, that he had "a little trouble in his bronchial tubes," or "a little chronic bronchitis," or merely "that he is a little run down." Many such patients come here, and we all see them occasionally, with the idea that other persons who come are consumptive, but that in their own cases there is nothing of serious import. Hence they are likely to rebel at suggestions that they conform to such rules as are commonly given to phthisical patients. Some even refuse to believe that they have any serious disease, because they say, if such were the case, "my own physician at home would have told me so, and he said nothing of the kind." Thus I have under my care at this time a young lady with all the usual signs of phthisis at the right apex, who utterly refuses to believe that there is anything of sufficient import in her case to make it necessary for her to stay more than a few months in Colorado, because her physician in the East told her that she had only "a little bronchial difficulty," and a visit there for a few months would be all that was necessary. She has been here for five months, and is making preparations to return to the Atlantic coast in April, as she has gained thirteen pounds and her cough has nearly ceased. The great probability is that she will be compelled to return here within a short time after her return.

I have seen many illustrations of this same error during the past eleven years. Most of the cases from the larger medical centres, and nearly all from the hospitals and clinics, which we see in dispensary and hospital work here are quite aware of the gravity of the disease for which they have left home, and are prepared to stay here permanently if necessary. Certainly private patients should not be deceived in a matter of so serious import through any motives of false delicacy or desire to avoid telling an unpleasant truth upon the part of the family physician. It is almost needless to state that it is much easier to treat those patients who have a full knowledge of the gravity of the situation than others. I think the physician, in sending a patient here, should speak plainly of the necessity of remaining for some time, or even, possibly, permanently. I have known several consumptives to regain health to such a degree as to lead them to believe that they could safely reside in the East, who, breaking down again, have returned to Colorado too late to again check the tuberculous process, so that the outcome has been a fatal one. With proper advice from the family physician in the East, many such patients would see the desirability of remaining here permanently rather than incur such risks by a return home.

A wider dissemination of the points so well treated in the paper of Dr. Knight would certainly be of inestimable value to the profession, and, through them, to the public.

I am yours very truly,

J. N. HALL, M.D.

ANOTHER FOUR-YEARS' COURSE.

UNIVERSITY OF MINNESOTA,
MINNEAPOLIS, December 30, 1893.

MR. EDITOR:—The Board of Regents of the University of Minnesota have extended the course of study in the College of Medicine and Surgery from three to four years, of eight and one-half months' duration for each course. The new schedule of requirements becomes operative in 1895.

PERRY H. MILLARD, M.D.,

Dean of the College of Medicine and Surgery.

METEOROLOGICAL RECORD.

For the week ending December 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-	Thermom-		Relative		Direction		Velocity		We'th'r.		Rainfall in inches.		
	meter	eter.		humidity.		of wind.		of wind.		.				
	Daily mean.	Daily mean.	Maximum.	Minimum.	6.00 A. M.	8.00 P. M.	Daily mean.	6.00 A. M.	8.00 P. M.	6.00 A. M.	8.00 P. M.			
S..17	29.67	36	41	30	77	84	80	S.W.	W.	12	9	O	C.	.08
M..18	29.96	22	28	15	74	68	71	N.W.	S.W.	4	8	C	F.	
T..19	29.76	31	45	24	97	82	90	S.W.	W.	4	16	N	O.	.07
W..20	30.24	24	29	18	51	54	52	W.	W.	24	15	O	C.	
T..21	30.16	30	44	17	54	52	53	S.W.	S.W.	13	22	O	C.	
F..22	30.38	38	42	33	71	90	80	W.	E.	10	13	F	N.	
S..23	30.14	44	55	32	90	79	84	S.W.	W.	10	9	O	C.	.03

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; E., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 23, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.	
New York	1,891,306	818	294	12.80	24.00	.72	3.24	.96	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	—	—	—	—	—	—	—	
Brooklyn	978,294	368	108	10.53	24.57	.81	4.32	1.08	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	480,297	264	68	14.06	27.74	.38	7.22	2.66	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	131	24	5.84	16.72	4.56	3.80	—	
Cincinnati	305,400	130	36	14.63	10.78	3.85	3.85	—	
Cleveland	290,000	140	46	13.49	22.01	3.55	4.26	1.42	
Pittsburg	268,708	104	37	11.96	24.84	1.84	1.84	6.44	
Milwaukee	260,000	96	50	13.52	20.80	1.04	6.24	1.04	
Nashville	87,754	31	7	3.23	16.16	—	—	—	
Charleston	65,105	44	15	—	4.54	—	—	—	
Portland	40,000	18	1	5.55	33.33	—	—	5.55	
Worcester	96,217	28	10	19.25	15.40	—	3.66	—	
Fall River	87,411	33	13	12.12	39.39	3.03	3.03	3.03	
Lowell	87,191	36	12	8.24	8.34	2.78	—	2.78	
Cambridge	77,100	36	15	17.16	20.00	—	8.88	3.86	
Lynn	62,656	20	—	10.00	10.00	—	5.00	—	
Springfield	48,684	21	5	4.76	33.22	—	—	—	
Lawrence	48,305	—	—	—	—	—	—	—	
New Bedford	45,886	36	14	8.34	27.80	—	2.78	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	13	2	7.69	7.69	7.69	—	—	
Brookton	32,140	7	—	14.28	14.28	14.28	—	—	
Haverhill	31,396	5	0	—	40.00	—	—	—	
Chelsea	30,264	15	2	13.53	13.33	6.96	6.96	—	
Malden	29,394	10	2	—	20.00	—	—	—	
Newton	27,656	—	—	—	—	—	—	—	
Fitchburg	27,146	8	3	12.50	37.50	—	—	—	
Taunton	26,972	13	1	—	30.76	—	—	—	
Gloucester	26,688	5	3	—	—	—	—	—	
Waltham	22,058	9	2	—	22.22	—	—	—	
Quincy	19,642	11	4	9.09	36.36	9.09	—	—	
Pittsfield	18,402	10	3	10.00	30.00	—	10.00	—	
Everett	16,585	4	1	25.00	60.00	—	25.00	—	
Northampton	16,331	13	0	7.69	15.38	7.69	—	—	
Newburyport	14,073	4	2	25.00	—	25.00	—	—	
Amesbury	10,920	5	3	60.00	20.00	—	—	60.00	

Deaths reported 2,550; under five years of age 785; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 297, acute lung diseases 575, consumption 273, diphtheria and croup 121, typhoid fever 37, scarlet fever 37, diarrhoeal diseases 32, measles 20, whooping-cough 17, cerebro-spinal meningitis 15, erysipelas and malarial fever 6 each, small-pox 4.

From diarrhoeal diseases New York 12, Cincinnati 6, Cleveland 5, Brooklyn, Boston and Cambridge 2 each. From measles New York 9, Brooklyn and Milwaukee 4 each, Worcester 2, Boston 1. From whooping-cough New York 6, Brooklyn 4, Cincinnati 3, Boston 2, Cleveland and Pittsburg 1 each. From cerebro-spinal meningitis New York 6, Brooklyn 3, Cleveland, Worcester, Lowell, Lynn, Somerville and Fitchburg 1 each. From erysipelas Boston 2, New York, Cleveland, Pittsburg and New Bedford 1 each. From malarial fever Brooklyn 3, New York, Nashville

and Brockton 1 each. From small-pox New York and Boston 2 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,322,429, for the week ending December 16th, the death-rate was 26.6. Deaths reported 5,275: acute diseases of the respiratory organs (London) 711, whooping-cough 172, diphtheria 122, measles 74, scarlet fever 66, fever 52, diarrhoea 47.

The death-rates ranged from 16.0 in Norwich to 36.4 in Bristol; Birmingham 21.2, Bradford 22.1, Cardiff 21.2, Croydon 24.9, Leeds 23.6, Leicester 29.4, Liverpool 31.8, London 31.8, Manchester 27.6, Newcastle-on-Tyne 21.2, Nottingham 31.9, Portsmouth 20.3, Salford 19.7, Sheffield 27.0, Sunderland 19.0, West Ham 25.5, Wolverhampton 19.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 23, 1893, TO DECEMBER 29, 1893.

By direction of the Secretary of War, leave of absence for two months, to take effect on or about January 15, 1894, with permission to apply for an extension of one month, is granted MAJOR JOHN D. HALL, surgeon.

LIEUT. JOHN S. KULP, assistant surgeon, U. S. A., is relieved from further duty at Jackson Park, Chicago, Ill., from December 23, 1893.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING DECEMBER 16, 1893.

BAILHACHE, P. H., surgeon. Granted leave of absence for five days. November 28, 1893. To inspect quarantine ports. December 7, 1893.

PURVIANCE, GEORGE, surgeon. To inspect quarantine ports. December 7, 1893.

SAWTELLE, H. W., surgeon. To inspect quarantine ports. December 7, 1893. Granted leave of absence for three days. December 4, 1893.

AUSTIN, H. W., surgeon. Detailed as chairman, Board to amend and revise the Quarantine Regulations. December 9, 1893.

GASAWAY, J. M., surgeon. To proceed to Mobile, Ala., as inspector. November 22, 1893. To inspect quarantine ports. December 7, 1893.

MEAD, F. W., surgeon. Detailed as chairman, Board to examine candidates, Revenue Marine Service. December 9, 1893.

CARTER, H. R., surgeon. To proceed to Brunswick, Ga., for temporary duty. November 29, 1893. To inspect quarantine ports. December 7, 1893. Detailed as member, Board to revise and amend the Quarantine Regulations. December 9, 1893.

WHEELER, W. A., surgeon. Detailed as member, Board to revise and amend Quarantine Regulations. December 9, 1893.

BANKS, C. E., passed assistant surgeon. Granted leave of absence for seven days. November 22, 1893.

CARMICHAEL, D. A., passed assistant surgeon. To inspect quarantine ports. December 9, 1893.

WHITE, J. H., passed assistant surgeon. To proceed to Savannah, Ga., for duty. December 4, 1893. Detailed as member, Board to revise and amend the Quarantine Regulations. December 9, 1893.

CARRINGTON, P. M., passed assistant surgeon. To proceed to Baltimore, Md., for duty. December 9, 1893.

WILLIAMS, L. L., passed assistant surgeon. To proceed to Charleston, S. C., for duty. December 4, 1893.

PETTUS, W. J., passed assistant surgeon. Granted leave of absence for eleven days. To proceed to Buffalo, N. Y., for duty. December 4, 1893.

KINYOUN, J. J., passed assistant surgeon. To rejoin station Washington, D. C. November 24, 1893. Granted leave of absence for three days. December 4, 1893. Detailed as recorder, Board to revise and amend Quarantine Regulations. December 9, 1893.

WOODWARD, R. M., passed assistant surgeon. Granted leave of absence for seven days. To proceed to Cairo, Ill., for duty. December 4, 1893.

VAUGHAN, G. T., passed assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Marine Service. December 4, 1893.

COBB, J. O., passed assistant surgeon. To inspect quarantine ports. December 7, 1893.

GUITERAS, G. M., passed assistant surgeon. To report at Bureau for temporary duty. December 6, 1893.

GEDDINGS, H. D., passed assistant surgeon. To proceed to New York, N. Y., for duty. December 2, 1893.

YOUNG, G. B., assistant surgeon. To proceed to New York, N. Y., for duty. December 4, 1893.

STIMPSON, W. G., assistant surgeon. To proceed to Detroit, Mich. December 4, 1893.

BURNS, B. W., assistant surgeon. Granted leave of absence for seven days. To proceed to Washington, D. C. December 4, 1893.

HOUGHTON, E. R., assistant surgeon. To proceed to Vineyard Haven, Mass., for duty. December 4, 1893.

ROSENAU, M. J., assistant surgeon. To proceed to St. Louis, Mo., for duty. December 4, 1893.

NYDEGGER, J. A., assistant surgeon. Granted leave of absence for seven days. To rejoin station Pittsburgh, Pa. December 7, 1893.

STEWART, W. J., assistant surgeon. Granted leave of absence for fourteen days. November 27, 1893.

STRAYER, EDGAR, assistant surgeon. Granted leave of absence for seven days. November 27, 1893.

OAKLEY, J. H., assistant surgeon. To proceed to Halifax, N. S., for temporary duty. November 24, 1893. To proceed to New York, N. Y., for temporary duty. December 14, 1893. To proceed to San Francisco, Cal., for duty. December 16, 1893.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — The annual meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, January 8, 1894, at 8 o'clock, P. M. Election of officers. Report of the Treasurer.

Dr. W. J. Otis will read a paper on, "External Piles and their Relation to the External Hemorrhoidal Veins." Discussion by Dr. C. B. Porter, Dr. H. L. Burrell and others.

Dr. Myles Standish will read a paper on, "Two Cases of Chancres of the Eyelid." Discussion by Dr. A. Post, Dr. E. Wigglesworth and others.

Dr. C. B. Porter will show patients illustrating results of some exceptional operations for exceptional surgical lesions.

Members are kindly requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., Secretary.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, January 10th, at 8 o'clock, by Assistant Professor Ernst. Subject, "Advances in Bacteriology." Physicians are cordially invited.

RECENT DEATHS.

CHARLES M. CRESSON, M.D., a well-known chemist of Philadelphia, died December 27th, aged sixty-five years.

DR. S. GUTTMANN, of Berlin, the editor of *Deutsche Medicinische Wochenschrift*, died of influenza, December 22d.

BOOKS AND PAMPHLETS RECEIVED.

Epileptic Insanity. By James H. McBride, M.D. Reprint. 1893.

Fourteenth Annual Report of the Associated Charities of Boston, November, 1893. Boston. 1893.

Bacteriology in its Relations to Chemical Science. By Percy Frankland, Ph.D., B.Sc. (Lond.), F.R.S. Reprint. 1893.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-fifth Annual Session held at Baltimore, April, 1893; also Semi-annual Session held at Easton, March, 1892.

Spastic Senile Entropion cured by Canthotomy. The Treatment of Blennorrhoea Neonatorum. The Relation between the Eyes and Disease of the Female Genital Organs. By Boerne Bettman, M.D., of Chicago, Ill. Reprints. 1893.

The Measured Effects of Certain Therapeutic Agents, among which especially are Lavage, HCl, and Intra-gastric Electricity, upon the Secretory and Motor Functions of the Stomach in Cases of Chronic Catarrh (Glandular Gastritis). By D. D. Stewart, M.D. Reprint. 1893.

Chirurgie des Malades du Système Nerveux. M. le Professeur Charcot, Leçons du Professeur, Mémoires, Notes et Observations Parus pendant les années 1889-90 et 1890-91 et publiées sous la direction de Georges Guinon, chef de clinique avec la collaboration de MM. Blocq; Souques, et J. B. Charcot, internes de la clinique. Tome II. Paris: Aux Bureaux du Progrès Médical. 1893.

Original Articles.

CASES OF ABDOMINAL SURGERY OCCURRING IN THE PRACTICE OF DR. J. COLLINS WARREN AT THE MASSACHUSETTS GENERAL HOSPITAL DURING THE WINTER OF 1893.

REPORTED BY CHARLES L. SOUDDER, M.D.

(Concluded from No. 1, page 5.)

CASE XIV. Exploratory laparotomy for tumor in the region of the kidney; recovery.

A negro, forty-two years old, single, always well with the exception of some rheumatism, six weeks ago complained of pain in the back and the left side of the abdomen. This pain has gradually increased, accompanied by nausea. Decubitus on the left side. The chest and spine, upon examination, were negative. There was a tumor in the left loin extending under the ribs, which moved slightly with respiration. The edge of the tumor was rounded, rather ill-defined, and not movable. The colon passed in front of the tumor.

Operation.—A curved incision was made from the eighth rib on the left, with the convexity down, as far as the left anterior superior spinous process. The colon presented. The patient having been tipped over on one side, the intestines were displaced so as to uncover the region of the left kidney. Irregular nodular masses (not connected with the spleen, but retro-peritoneal) were found adherent to the inferior vena cava and to the left iliac vessels and to the brim of the pelvis, these being enlarged lymphatic glands. Large and tortuous veins covered the mass in the region of the left kidney. An incision was made through the posterior wall of the peritoneum. The abdominal contents were displaced from over the tumor as far as the spinal column, clearly exposing this region. Owing to the presence of infected glands, it was found impossible to remove the mass without incurring too great risk, and further interference was advised against by those seeing the patient in consultation. Consequently, the abdominal wound was closed, and the patient made an uninterrupted recovery from the exploratory operation. He was heard from several months after he left the hospital, and was in fairly good health, the mass in the side still being present.

CASE XV. Pyo-salpinx; operation; recovery.

A woman, married, twenty-three years old. The catamenia have always been regular and painless until within the last two years, when there has been some irregularity. She has two children, the youngest being three years old. For two years there has been some swelling in the left side of the pelvis, which has caused a certain amount of pain. She entered the hospital on the medical side a few months ago, and was treated for a left salpingitis, and apparently improved while under treatment. Symptoms of pain in the left groin returned shortly after her discharge from the hospital. Examination upon re-entering found tenderness in the left groin upon deep pressure, and by the vagina the left cul-de-sac filled with a doughy mass which was tender.

Operation.—Trendelenberg position. A median incision found the omentum slightly adherent to the uterus and to a tumor in the left side. While freeing the adhesions the sac of the tumor was ruptured and a puriform fluid escaped, some of it into the abdominal cavity. The sac was removed, the abdomen washed with boiled water and drained by glass drainage in the

posterior cul-de-sac together with iodoform gauze. The tube was removed in two days, when the temperature was normal. She was discharged four weeks from the time of the operation, well.

CASE XVI. Exploratory laparotomy; carcinoma of stomach; recovery.

A man fifty years old, single, had always been well, although not very strong. Two months ago he had the feeling of weight in the left side, especially on rising in the morning; had lost some weight during this time, and had a dull, dragging feeling in the left abdomen. At no time has there been vomiting or distress after eating. His bowels have been fairly regular. He was pale, but not cachectic. In the abdomen, a hard, ovoid mass was felt in the epigastric region, which was movable, slightly irregular on the surface, seen to move with respiration, and was not adherent to the abdominal wall.

Operation by an incision parallel to the left costal margin. The stomach presented in the wound very much enlarged, with a tumor at the greater curvature reaching nearly to the pylorus. The tumor involved the inferior, posterior and some of the inferior and anterior walls of the stomach. It was nodular posteriorly and adherent to the transverse colon. No secondary nodules were detected in the liver. On account of the extent of the growth, which previous to the operation could not be accurately determined, further interference was advised against. The wound was closed with interrupted sutures.

The man made a good recovery from the laparotomy, and died about six months later from the disease.

CASE XVII. Double pyosalpinx; operation; recovery.

A woman thirty-one years old, married. Catamenia regular until the past few months. No children or miscarriages. Two weeks ago pain and soreness developed in the right ovarian region accompanied by tenderness in the right side of the abdomen; and upon vaginal examination bulging of the right vaginal vault, with fluctuation, was detected.

Operation.—Trendelenberg position. A median incision disclosed a tumor on the right side, the size of a small orange, adherent to the omentum and small intestine posteriorly. The tip of the vermiform appendix was adherent to the tumor. Half an ounce of foul pus and cheesy material escaped posteriorly upon an attempt to unroll the tube, which had become twisted backward. Upon removal of the tube, the pelvis was thoroughly irrigated with boiled water, a glass drainage-tube placed in the posterior cul-de-sac, and the abdominal wound partially closed. The drainage-tube was removed in one week. Two days later there was a sudden rise of temperature, and a phlebitis developed on one side. This gradually subsided, and the patient was discharged a few weeks later, the wound entirely closed. Shortly after the removal of the glass drainage the discharge became fecal, but remained so for only a day or two. Evidently a fistula formed, which rapidly closed without interference.

CASE XVIII. Abdominal hysterectomy for cancer of the uterus; death.

A woman fifty-one years old, married. Her grandmother died of "cancer of the womb." The patient passed the climacteric six years ago. For the past six months she has complained of pain in the left ovarian region, which has extended into the groin and left thigh. Vaginal examination found present an os uteri

three or four times the normal size, ulcerated, and the vaginal wall adjacent to the external os likewise ulcerated. An extension of the disease beyond the regions above named was not detected. Twenty-four hours previous to the operation the cervix was cauterized with the Pacquelin cautery and packed with iodoform gauze, the vagina being likewise packed. At the time of operation the vagina was irrigated with corrosive sublimate (1 to 3,000). The cervix was again cauterized, and an iodoform gauze tampon placed in the cervix. In the Trendelenberg position by median abdominal incision the uterus was exposed. The right and left broad ligaments were clamped and divided, the ovarian arteries being separately ligatured. The peritoneum was separated anteriorly from the bladder and posteriorly from the rectum. The vaginal wall was found, excepting in the area felt by previous examination, to be free from new growth. The vagina was packed with gauze up to the vaginal wound. A glass drainage-tube was placed through the abdominal incision down to the vaginal wound, and surrounded by gauze so that there was continuous gauze drainage from the abdominal wound to the vaginal wound externally. The infiltration of the vaginal wall below the cervix made the attempt to remove the disease through the abdominal wound exceedingly slow, and prolonged the operation so that the shock was necessarily very severe, and in her weak condition proved to be too great. The patient died twenty-four hours after her recovery from ether.

CASE XIX. Secondary laparotomy in presence of a suppurating sinus; death.

A woman, four months ago, complained of pain in the left ovarian region. There was some swelling in this region later. She remained in bed for ten weeks; and some ten weeks ago the doctor in attendance aspirated the swelling, getting no fluid. Two weeks later a purulent discharge appeared from the vagina and the rectum. A laparotomy was done soon after this. The left ovary and a pus-tube were removed. Several months later she returned to the hospital with a discharging sinus in the abdominal wound, and complained of great pain and tenderness just posteriorly to the anus. Under ether, an abscess in the region of tenderness posterior to the anus was opened, curetted and packed with iodoform gauze. It was found that there was a communication between the anal sinus and the abdominal sinus. The fecal discharge contained pus. Various attempts were made to close the abdominal sinus by means of curetting, canterization and various careful dressings.

With the hope of excising the abdominal sinus, and because of the presence of an encysted tumor of the right broad ligament and ovary which had developed since the left ovariectomy, a second laparotomy was performed. At the time of this operation very great precaution was taken to prevent infection of the fresh abdominal wound by the old sinus. To prevent this, the sinus was, previous to the operation, thoroughly cauterized, and the fresh wound very carefully protected. The left ovary and cyst were removed; the sinus was excised; and a glass drainage-tube was placed in the posterior cul-de-sac. The upper part of the wound was sutured. Three days later, after gradually increasing symptoms of peritonitis, the patient died.

CASE XX. A male deaf mute, thirty-six years old and married, entered the hospital with the history

of having been several times jaundiced; otherwise, he had always been well. A little over two months ago he was said to have had typhoid fever. The symptoms at that time were right iliac pain, vomiting, constipation followed by diarrhoea. Four weeks ago he had a similar attack, but less severe, since which time he has not been very well. A week ago a painful tumor was noticed in the epigastrium, tender upon pressure. The man was fairly well developed. His skin was slightly yellow. The sclerotic of the eye was white. The pulse was 110 and was of fair strength. The heart and lungs were negative. The epigastric swelling was about the size of a small orange. The movements from the bowels were of natural appearance. He slept fairly well. The temperature at midnight was 103.4°, and was normal in the morning.

Operation by an incision parallel to the right costal border. A cavity the size of the end of the thumb was opened and a small amount of puriform fluid evacuated. Several blind pus cavities were opened and curetted it not being possible to determine their exact anatomical boundaries. The bowel appeared to be healthy in the immediate neighborhood. The pus cavity seemed to be situated in a mass of inflammatory exudation. Gauze drainage was inserted and an absorbent dressing applied. In the right iliac fossa at the time of this operation there was very slight dullness. Three days after the operation this dullness in the right iliac fossa became more marked and pain in that region developed. One week after the first operation the patient was again etherized and an incision was made parallel to Poupart's ligament, over the dull and tender area in the right iliac fossa. A bile-stained fluid with light green flakes was evacuated, indicating a fecal fistula. The vermiform appendix was not found in connection with the cavity from which the fluid came. An opening was made in the colon during the operation, and this fecal fistula gradually closed, and the wound of the first operation closed rapidly; and the patient was discharged about five months after entering the hospital gaining in flesh and strength, apparently well, having had a normal temperature for four weeks previous to his discharge.

CASE XXI. General suppurative peritonitis following the reduction of an inguinal hernia by taxis; laparotomy; washing and drainage of the abdominal cavity; recovery.

For a year, the patient, who was a thin and yet fairly well developed man, had had a left inguinal tumor. Two days before entrance tenderness developed in the region of this tumor and an attempt was made by the attending physician to reduce it, which was supposed to be an inguinal hernia, by taxis. The tumor was reduced in size, and there was no impulse upon coughing. Because the symptoms of strangulation and intestinal obstruction remained, he was sent to the hospital, and it was decided to lay open the hernial sac, and a very peculiar condition of things was discovered. On laying open the sac, which had thick and rigid walls, it was found to be uninhabited, containing serum and flakes of fibrin only. A finger being passed through the neck of the sac into the abdominal cavity was, upon removal, followed by a gush of thick creamy pus. The first incision was enlarged nearly to the anterior superior spinous process of the ilium. Coils of intestine were thus exposed, which were found injected and covered with flakes of fibrin and pus. A finger introduced into the opening passed

to the hollow of the sacrum freely among the coils of intestine.

An abdominal incision through the umbilicus, half-way to the pubes, was now made for purposes of drainage of the entire abdominal cavity. Pus gushed from the median incision. The entire abdominal cavity was flushed with warm water through the median incision, the wash-water passing out of the left inguinal opening. Glass drainage-tubes were inserted through both incisions to the hollow of the sacrum. A counter-opening was made in the left loin, through which two large rubber drainage-tubes were passed from the median incision. The wounds were packed about the tubes with iodoform gauze. The operation relieved the general peritonitis, but the symptoms of obstruction remained; consequently after six days the presenting coil of bowel, which proved to be small intestine, was opened in the left inguinal region with great relief to the distention. A discharge of feces by both rectum and fistula followed. The median abdominal wound healed kindly, but considerable difficulty was found in preventing the digestion of the skin about the opening of the fecal fistula in the left groin. The skin immediately surrounding the fistulous opening was protected by means of absorbent cotton and oxide of zinc ointment, which was allowed to dry, forming a firm crater-like opening around the fistula. A special nurse was in constant attendance, and removed the discharge from the fistula as fast as it appeared at the bottom of the crater. Gradually under this very careful attention the fistula healed. Dr. Warren decided not to attempt closure of the fistula by suture, but to trust to healing by granulation, as the fistulous opening was situated at the bottom of a deep wound, the conditions differing materially from those present in cases in which the bowel presents close to the abdominal wall in artificial anus. The man left the hospital in splendid physical condition, with the fistula healed, about three months after the operation.

Remarks.—This case may be very well regarded as one of most desperate character. A suppurative peritonitis was probably caused by an inflammation of the strangulated loop of intestine which had been reduced out of an old and rigid sac. It illustrates too, the value of efforts to relieve general suppurative peritonitis by operative procedure.

CASE XXII. Chronic appendicitis; recovery.

A man, thirty-five years old, married, had always been well previous to his present illness, four months previous to the entrance to the hospital, when he had a sharp attack of pain across the middle of the abdomen, was constipated, but did not vomit. This attack lasted for a few days, and he went away as a sailor to sea, since which time he has had one other similar attack. At the time of entrance some resistance was felt to the right of the epigastrium. He had considerable pain in the right iliac region and fulness in the right flank, where there was dulness and increased resistance. There was very great tenderness present.

Operation.—An incision was made parallel to Poupart's ligament upon the right side. The muscles, as divided, appeared oedematous. An abscess cavity was opened, containing a small amount of puriform material. The wall of the abscess cavity presented the appearance of sarcomatous tissue. The wound was thoroughly washed and packed with iodoform gauze. Six weeks later a tender spot, with some

swelling, was felt just below the right false ribs. Under ether, an incision here evacuated eight ounces of foul pus. One day later a second fluctuating area developed just above the last incision, and was opened, giving exit to four ounces of pus. The exploring finger entered an abscess cavity behind the liver. Three weeks later, having a continuous pus temperature and growing weaker, another operation was done, laying open the previous incisions, which had not yet entirely healed. The patient is still in the hospital, the old sinus discharging.

CASE XXIII. Movable kidney; nephrorrhaphy; recovery.

A woman, married, in good health, has had since her last child was born, sixteen months ago, distress in her abdomen in the region of the stomach, accompanied by a dragging feeling. Has lost some flesh of late. Examination found a rounded movable tumor in the right hypochondrium, pressure upon which caused pain in the epigastrium. The tumor is easily moved. The knee-chest position permits more ready access to the tumor, which resembles the kidney in shape. An operation for the fixation of the kidney to the posterior abdominal wall was advised, as offering the best chance of relief from the symptoms. The operation of nephrorrhaphy was done by an incision four and one-half inches long in the right flank, starting two and three-quarter inches from the spine, one-half inch below the twelfth rib, and extending outwards towards the iliac crest. The muscles were divided in the full length of the incision. The edge of the latissimus dorsi slightly encroached on the wound. The perinephritic fat was found. All bleeding points were tied, and the fat tissue incised. Pressure over the abdomen caused the surface of the kidney to present in the wound. Five silk sutures were taken through the fibrous capsule and a little of the kidney substance, and then through the lumbar fascia and erector spinæ muscles. Two of the sutures were slightly above the middle of the kidney. The wound in the abdominal muscles was closed with three silk sutures, leaving some of the perinephritic fat bulging between them. The skin was sewed with interrupted silk sutures; baked gauze dressing; swathe. The condition of the patient at the end of the operation was good. The recovery was uneventful. The patient, after four weeks' recumbency, was allowed to walk about, wearing an abdominal binder of flannel.

CASE XXIV. A man, sixty-five years old; carcinoma of rectum; Littré's operation; recovery; condition six months after operation.

The patient was small, always well and strong till a year ago, when he noticed pain in the rectum on defecation. He has been troubled with frequent micturition for the last six months. Examination showed the patient to be well developed, but thin and somewhat cachectic. The radial and temporal arteries were atheromatous. By rectum, the prostate was found to be somewhat larger than normal and tender. Internal sphincter was rigid. Just above it was a tender spot; no induration was felt. The rectum was ballooned. Externally, in the left iliac region, a hard band was felt; it was tender, and corresponded to the site of the sigmoid flexure. Rectal tube passed readily eight inches up the bowel. Small movements resulted from high injections of glycerine and suds.

On the 24th of the month the operation was done. An incision three inches long was made in the left in-

guinal region, two inches above Poupart's ligament, starting just inside the line of the anterior superior spine. On opening the peritoneum, the sigmoid flexure presented, much distended with gas, and was sewed to the margins of the wound with three fine silk stitches on each side for a distance of one and one-half inches above and below the loop of bowel; the lips of the incision were united with three deep silk sutures.

On the 25th he had a good night; little pain or nausea. The gauze was slightly stained. Some three or four feet of small intestine were found protruding from the wound. Under ether the escaped bowel was cleansed with boiled water and replaced.

The man made a good recovery. The artificial anus was a success. Daily formed movements occurred. He had much less pain and ate well. After six weeks he was discharged from the hospital, greatly relieved.

Six months after the operation, December, 1893, he was examined, and the general condition was found to be much improved. Said he could walk a mile with ease. He had formed movements through the artificial anus, and some liquid always passed per rectum. He had very little pain, mostly in the left lumbar region. He had no pain in the leg. There was a tendency for superficial abscesses to form around the fistula, which discharged slightly and then dried up.

The foregoing cases serve to illustrate the variety of abdominal surgery occurring in a single service at the Massachusetts General Hospital, and are suggestive of the methods of procedure in certain obscure and difficult cases.

In every instance great care was exercised in the preparation of the field of operation, the instruments used, the ligatures, suture and dressing material. The hands and arms of the operator and his assistants were first scrupulously cleansed with soap and nail-brush, then with a saturated solution of permanganate of potash, decolorized with oxalic acid and peroxide of hydrogen and soaked in a solution of corrosive sublimate of the strength of one to two thousand. In spite of the great care exercised in the counting of sponges, one was left in the abdominal cavity of one of the fatal cases.

There were in all twenty-four cases, as follows:

Solid tumor of the ovary	1
Multilocular cyst of the ovary, single	2
Salpingitis	3
Congenital liver hernia	1
Cyst of the broad ligament	1
Appendicitis, acute	3
Appendicitis, chronic	1
Salpingitis, double, tubercular	1
Carcinoma uteri	1
Carcinoma uteri (hysterectomy)	1
Cysto-adenoma of the ovary	1
Intra-ligamentous ovarian cyst	1
Exploratory laparotomy	2
Sinus of abdominal wall	1
General suppurative peritonitis	1
Movable kidney (nephrorrhaphy)	1
Carcinoma recti (Littre's operation)	1
Obscure abdominal abscess	1

There were three deaths, making a mortality of twelve and one-half per cent.

A NOVEL CHRISTMAS ENTERTAINMENT.—A daily paper relating the events at the annual Christmas party at the poor-house of a neighboring city, says: "An excellent entertainment by local talent was given. Among the features was the treating of several of the inmates who have rheumatism by a magnetic healer."

OBSTETRICAL ASEPSIS.¹

BY JOSEPH PRICE, M.D., OF THE PRESTON RETREAT, PHILADELPHIA.

It is customary to come to Boston to listen. The one who comes here to talk should be sure he has something to say. This fact gives me embarrassment. I do not bring to you those graces of classic culture attained in old Harvard's college halls. I have no surprises in the shape of new facts; and my only logic will be that with which my experiences, observations and reading supply me. The same may be yours, and in giving mine I only strengthen and confirm yours. Within myself I represent but little; yet with you I enjoy the proud privilege of sharing in the common triumphs of our profession. A distinguished novelist, one who gives us in our brief leisure delightful entertainment, sitting talking with a Boston friend on a public occasion in one of your great halls, remarked, on the entrance of one of your illustrious citizens, orators and statesmen—a man he did not know, had never seen before: "There goes one of God's noblemen." It is with such men I would be in touch for what they are to me, for what they have for me, for the strength such contacts and associations renew in me. If there be a human calling, service or profession that commands only the best, all the forces of innate and cultured manhood, all that distinctively makes up the nobleman, it is that of medicine and surgery.

It may impress the profession that I urge with a relentless persistency the importance of cleanliness in maternity work, and in all surgery, special and general. For this urging there is no need of apology. It is one of the lines in which our efforts run no risk of extravagance. From time immemorial there has been much discussion of dietary precautions, drink, climatic influences, dress, exercise, morals. Much that is wise has been said, and much that is otherwise. Yet the subject of cleanliness has never been given that consideration in all its many bearings its importance to the general health demands, and that is yet more imperatively demanded in all cases where medical and surgical treatment is involved. No matter how scrupulous our purely personal precautions may be to render the patient less liable or susceptible to infections, if the influence of environments are against us, our success cannot be complete. But science is going on correcting our mistakes and evolving for us new truths. It is not my purpose to deal with the abstruse questions of the science of obstetrics. Our increased knowledge of anatomy and of the phenomena of labor has cleared away many of our difficulties.

A high mortality in a maternity or in private obstetrical practice is simply evidence of bad management. Success in our maternities and in private obstetrical practice requires scrupulous attention to cleanliness. This cleanliness should begin with the physician, with his person, his clothing; his hands should not be in mourning. There should be no room for the application of the witticism of Charles Lamb to his companion in the game of cards: "If dirt were trumps you would hold a full hand." This cleanliness should extend to the nurse and with equal scrupulousness to the patient. In considering what cleanliness has done for maternities, it is interesting to note the views of some of the men who have filled important positions in our great schools as teachers.

¹ Read before the Obstetrical Section of the Suffolk District Medical Society.

Professor Hodge says: "The result of the whole discussion will, I trust, serve, not only to exalt your views of the value and dignity of our profession, but divest your minds of the overpowering dread that you can ever become, especially to woman, under the extremely interesting circumstances of gestation and parturition, the *minister of evil*; that you can ever convey, in any possible manner, a *horrible virus*, so destructive in its effects, and so mysterious in its operations as that attributed to puerperal fever."

Professor Meigs says: "I prefer to attribute them to accident, or Providence, of which I can form a conception, rather than to a contagion of which I cannot form any clear idea, at least as to this particular malady."

That is a pitiable, professional courage which makes Providence responsible for these calamities, when they are the result of unskilful work, neglect of important details of treatment, of the common-sense lessons of practical obstetrics, and of sleepy, lazy, slovenly, sloppy nursing. If you should tell one of that class of gentlemen who shift their bad work off on Providence, that their results were caused by filth, by inattention, bad nursing, unskilful treatment, their reply would probably be that of Emerson's school boy to the teacher: "That letter is A," said the teacher. "A," drawled the boy. "That is B," said the teacher. "B," drawled the boy. "That is W," said the teacher. "The devil it is," exclaimed the boy, "I thought it was something else."

But listen to the good sense of one of your New England teachers, Oliver Wendell Holmes: "The disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses."

Gordon, as far back as 1795, wrote: "I arrived at that certainty in the matter, that I could venture to foretell what women would be affected by the disease, upon hearing by what midwife they were to be delivered, or by what nurse they were to be attended, during their lying-in; and almost in every instance, my prediction was verified."

Since Gordon has made mention of the midwife, I will say that I am not so sure that she is a boon to the physician. She may serve to prevent his sleep from being disturbed, but I am uncertain as to her success in saving the lives of mothers and children. They rarely come from the more cleanly, refined and educated ranks of society. As a rule, they are without pretension to training for such responsibility; and the risks are those that come of ignorance and all that follows in its train. The nurse attending in lying-in cases should be scrupulously clean by habit in everything that pertains to her person, be of some refinement and culture, have had a prolonged period of pupilage. In the service of every obstetrician there should be the trained nurse.

I am not stating a modern medical experience when I state that we cannot expect good results in a stinking atmosphere, by breathing air filled with the volatile refuse of the human body, the effluvia of sewers. It is the stealthy, lurking poisons, those in ambush, our cleanliness must reach. It would be interesting as well as valuable to us if we had reliable statistics of the many cases of septicæmia caused in young and healthy women by the impurity of the air of the room in which they are confined, by the septic influence of chronic pyæmia and malignant disease. Cancer of the stomach, all discharging malignant sores are a source

of danger when in close proximity to a lying-in woman. We have passed beyond questioning drain and sewer-gas poisoning. And in this connection we must get beyond simply interrogating tables of mortality. The inquiry should be extended as to how many women barely escape with their lives, and thus escaping live out miserable lives, useless as wives and mothers, a burden to their families or the community.

There can be no restricting the broad meaning of the term "cleanliness." It applies with strong force to person, to clothing, to hands, to finger-nails, and with yet stronger force to personal morals. As physicians we are the supremely trusted of society; we are the missionaries of a humanly saving Gospel, the one supreme command of which is, "Be clean." When we have clean men—clean morally; men with high self-control, the energy and intensity of whose moral lives diffuses itself through—permeates—their very clientèle; then we shall have less syphilitic complications. Improved morals and healthful physical conditions go together. And there is no form of cleanliness more strongly and devoutly to be hoped for. We have much to do with the underlying, the better life-principles of our social fabric. We communicate what we are; we dominate in proportion as our own cleanliness is beyond reproach. The alliance of clean morals with the forces of our science, with our improved arts and methods, will greatly aid in reducing the sum of human suffering, and relieve us of much of that severe tension, that weighty, wearing burden of anxiety inseparable from much of our work. That general practitioner or surgeon who lightly takes a case into his hands for treatment, no matter what its nature or character, who does not realize that it appeals to the best genius of his science and art, who does not feel the motor force of solicitude as to issue, is unworthy of a place in our profession. There should be done with him that which your heroic—though, from the Briton's standpoint—naughty forefathers did with the tea: he should be thrown overboard.

I have been speaking of cleanliness in obstetrics, not as to its wider possibilities in the matter of general health. In obstetrics it is local uncleanness and not so much with general that we are concerned. Since health is one of the conditions of human happiness, there is nothing in which we should have so much and so enlightened and active an interest as in the health of our communities. Suppose you take note of the dumping-grounds within your municipality or its environs, of the particular localities where there are cesspools or putrescent collections of solid and liquid matter, and reckon the percentage of the sick and enfeebled, and the mortality within the same and in contiguous neighborhoods, and compare these with other localities where there is a rigid observance and practice of wise, scientific, healthful sanitary conditions. The result would be startling. It is not possible though to so analyze the statistics of mortality as to give due credit to filth.

Science and experience confirm the fact that under filthy conditions we run great risks and have deaths, and that under opposite conditions we have good results. We know that cases of zymotic disease are much more frequent and numerous within certain filthy localities or areas than they should be, than they are in others where sanitary conditions are as nearly perfect as it is possible to make them, where there is a more strict observance of the plain, conservative laws of hygiene.

An important question with physicians should be, How many diseases are preventable by absolute cleanliness, by rigidly enforced sanitary regulations, by rules that are the very transcripts from nature, those approved by the best science? We know that many diseases have their birthplace exterior to the human body. Many sad, horrifying experiences convince us that many diseases have their origin amid controllable conditions. The fact that many diseases go on more actively in summer than during any other season of the year can be credited to no other fact than that organic decomposition goes on more rapidly then than in other seasons.

The general public has not yet grown to a full appreciation of the beneficence of sanitary science and the necessity of the scrupulous practice of all its lessons. Such an appreciation will only be reached through enlightened, wisely directed and energetic efforts on the part of the medical profession. The extent of the responsibility of the profession in this matter cannot be overestimated or too strongly pressed home. We claim to be a self-governing people, to make our own laws, to have incorporated in them our own wills: their wisdom must be taken as the reflex of our wisdom. If they are inadequate or faulty in their provisions or they fail of execution, it is not difficult for us to trace a large share of the responsibility. The general public should be educated up to the understanding that there is no politics in disease, and that our sanitary authorities should be representative of the highest intelligence and scientific culture and research. They should be above the reproach of having any politics in their motives or their methods; they should be typical representatives of the best morals, intelligence, public spirit and enterprise to be found in the community, irrespective and regardless of party affiliation. They should not be appointed simply because they are the Governor's, the Mayor's or some City Father's friends, but for their clean morals and their brains. If disease only affected the small district or ward politician, no matter of what "kith and kin," we would say, Let the filth pile up, dump the garbage at the doors, dam up the sewerage, and be cheerful while the funerals pass. But these tough men live on while filth-diseases destroy the worthy and good.

The condensing of populations into close neighborhoods renders cleanliness and perfect sanitary administration difficult. This fact renders it the more important that the responsible work should be placed in intelligent hands.

My experiences and observations have not been confined to maternity hospitals, but have extended into the homes of the well-to-do, the refined and educated. They had their beginning in alleys and courts densely crowded with the poor; our best lessons, those of most practical value, we gain there. These unfortunates in their dire distress ask no questions, imply no doubts, but trust; and we put to severest test our resources, our best skill. The lessons we learn there, we carry into the sick-chambers of the more fortunate. My experiences and observations, therefore, have not been entirely drawn from or confined within the limits of a maternity hospital. I speak for maternities for the reason that I believe that there should be more of them, and that they should be better sustained. They should be established, and put under the best of management, in every manufacturing and mining town, in every centre of any considerable population.

It has not been long since the propriety of closing maternity hospitals in some of the cities of Europe was seriously discussed; by reason of their mortality they were condemned. This was very prominently a fact in Dublin not many years since, and was aimed specially at the great Dublin Hospital. The beneficence of the maternity hospital prevailed over ignorance and prejudice. They are a great source of education in one of the most important departments of medical education; but they have grown to be recognized to be something more than educational, as humane institutions and the most Christian of charities.

It will always be difficult to obtain full and accurate statistics in private obstetrical practice, such statistics usually being derived entirely from memory, no careful record being kept. It is also difficult to always obtain truthful and reliable statistics from many hospitals. In the matter of the data bearing upon this subject, we cannot do better than quote so eminent an authority as Dr. Matthews Duncan, of England.

"To judge the hospitals aright, the proper course is, evidently, to take the best as an example. We cannot justly condemn all hospitals because in that of Leipzig the mortality is one in seven. We do not condemn ovariotomy because in the hands of some surgeons the mortality of it is nearly cent. per cent. We take the practice of the best ovariotomists to judge by. To judge of hospitals, let us take the Dublin Hospital as managed by Collins. In seven years he had 16,654 births under his care. The mortality of mothers was one in one hundred. When I take this example, I must add that I regard it as not the best, but as a fair, handy and well-known example. If all hospitals are to be condemned, then this one must be condemned (1 in 100). And I ask any obstetrician to come forward and cast the first stone. Several have already come; but, in future, if any one is bold enough to come, he must tell us what is the mortality in his own practice, and he must consider whether or not his own practice is comparable with that of a hospital which receives the poorest, having among them drunkards, the diseased, the seduced, and also cases of difficulty in higher relative proportion than in ordinary practice. The great Dublin Hospital, then, can show a mortality of 1 in 100. Sir James Simpson has published the mortality of two years of his practice; it is 1 in 45, at least. Dr. Cross had in his practice a mortality of 1 in 98. I have had a mortality in mine (Duncan's) of, at least, 1 in 105. Dr. McClintock's is 1 in 108. Dr. T. E. Beathy's is 1 in 121."

When we get really trustworthy and comparable figures, how does hospital practice look? I, at least, cannot condemn it. I see no reason to doubt that it may be, and has been good enough to compare with any kind of practice. I know no good, large and unexceptional data of deliveries, which show results that are better than those of Dr. Collins in the Dublin Hospital.

I would here acknowledge an individual professional debt, one shared in by the profession at large — to that grand old man, the "Professor and Autocrat of the Breakfast Table," Dr. Oliver Wendell Holmes. We honor and love him for the delights we find in all the pages of his books; for his many witticisms pointed with great common-sense; for the elegant diction, clothing the great thoughts, veining every page he has written. We honor and love him the more for the great truths he has taught us, truths vital and guiding

in the practice of our profession. When all that was ever done, uttered or written, by a Hodge or a Meigs has passed out of human memory, ceases to be even honored by traditional mention, that described by Meigs as the "jejune and fizeuseless dreaming of the sophomore writer" will live on. The grand old "sophomore writer" lives to-day in a bright, cheerful old age, filled with the sense of a useful and nobly spent life, that his fellow-beings are the better for his having lived; honored of two worlds, and looking with assured trust and confidence into the next. What a depth of truth, what a deep touch of pathos in the following words of your loved New England Professor! They are words that should be deep graven in the memory of every obstetrician: "No man makes a quarrel with me over the counterpane that covers a 'mother, with her new-born infant at her breast.'"

TREATMENT OF SMALL-POX BY NON-ADMITTANCE OF THE CHEMICAL RAYS OF LIGHT.

BY RICH. HOGNER, M.D., BOSTON, MASS.

An article in the Swedish medical journal *Hälsö*, November 30, 1893, over the signature "F——" sums up what is at present known about the medico-practical significance of the ultra violet rays of light and begins with a mention of Prof. J. E. Widmark's article on "The Influence of Light on the Skin," published in *Hyggea* (Stockholm, Sweden), 1889, in which Widmark demonstrates that eczema (erythema) solare is caused by the ultra violet (chemical) rays of light from the sun, and in which he, at the same time, advances the opinion that this eczema must not be confused with eczema caloricum, which is caused by the influence of great heat. The latter usually develops instantly and hastily, and traces of it disappear with comparative rapidity; whereas the sun-erythema, on the contrary, first develops several hours, or even a day after exposure, is of longer duration, disappears after several days by scaling, and leaves a pigmentation.

In 1858, Charcot observed that the electric arc-light could cause a skin disease which greatly resembled sun-eczema. In the meantime it was reserved for Widmark to strengthen, through a series of exact experiments, the observations of Charcot, and to prove that the ultra violet rays of light played the chief part in the cause of eczema electricum. Finally Widmark quotes from Veiel the history of a woman who suffered from sun-eczema for a long time, which reappeared as soon as she came into the open air, even if the sky was clouded. She was not troubled by heat from a stove or intense lamplight and Veiel concluded, therefore, that the chemical rays were the cause. After Veiel had learned from a photographer that he succeeded best in excluding chemical rays of light by the use of dark red paper, he allowed his patient to go out in full sunshine when wearing a red veil. The experiment succeeded and she could remain out-of-doors for forty minutes at a time without inconvenience.

Through his experiments Widmark arrived at the conclusion that the ultra violet rays (whose caloric energy may be so little that it can scarcely be measured by the most sensitive instrument, and whose power of irritating the retina is so weak that it is only perceived by our eyes when the rays of light are en-

tirely shut out), do develop pathological processes on the surface of the body, in case they are of sufficient strength.

In the *Hospitals Tidende*, No. 27 (published in Copenhagen), appears an article concerning "The Influence of Light on the Skin," by Prosector N. R. Finsen. After relating Widmark's experiments and proofs that the ultra violet rays of sunlight produce eczema solare in an acute form, some observations of Unna are related, which show that pigmentation in such a case is the result of a chronic influence from the same light, and forms a protection for the skin. It is further shown from a paper in the *Lancet* for 1867, by C. Black, that the latter has employed non-admittance of daylight with remarkable success during a small-pox epidemic, and that Black's observations were endorsed by Barlow and Waters (*Lancet*, 1871).

On the strength of the foregoing and our present knowledge of light as an irritant of the skin, Finsen advanced the opinion that in place of complete exclusion of daylight from the small-pox patients, a closely-drawn red curtain or a window of red glass may be used.

The proposition was soon put into execution; for only one month later, Dr. Lindholm, of Bergen (Norway), wrote to Finsen as follows: "I am pleased to be able to tell you that the proposed treatment of small-pox seems to have a remarkable effect, inasmuch as the oedema disappears rapidly, and the suppurative fever does not appear at all." This applied to ten unvaccinated cases.

In No. 44 of the same journal we find a further statement of the small-pox epidemic in Bergen, related by Dr. Svendsen, where the following occurs: The clinical diagram of the cases treated in this way shows the following deviations: "The stage of suppuration was avoided; there was no increase of temperature, no oedema, etc. The patients went from the vesicular stages, which seemed to me somewhat protracted, immediately to convalescence and were spared disfiguring scars." Although the material is indeed small, from which to prove the efficacy of this mode of treatment in all cases, Dr. Svendsen considers that the results call for further trials of this simple and harmless method. But it must be strictly employed and before the suppuration stage begins; later its use would be of no avail. A couple of test cases where the patients were exposed to daylight, after excision began everywhere except on the hands, showed that the vesicles there began to suppurate and left small scars.

In the same number of the *Hospitals Tidende*, Prosector Finsen writes — in a new and longer treatise, — "Concerning the Injurious Influence of Chemical Rays on the Animal Organism," after having briefly recalled the contents of the preceding article: "The so-called chemical rays which have their place principally in the blue and violet, but especially in the ultra violet portion of the spectrum, are the most frangible rays of light; in them the chemical influence is strongest, but the caloric influence at a minimum. The condition at the other end of the spectrum is just the reverse; there the red and ultra red rays are the least frangible, there the caloric influence is strongest and the chemical influence at a minimum."

These two kinds of rays, the red and the violet, being representatives of the two extreme ends of the spectrum, seem also to exert very dissimilar physiologi-

cal influences. The violet seem to act with more intensity, at least their influence is more obvious to the eye; and when one collects observations on the influence of monochromatic light on different organisms and combines them, one finds that there seems to be a common quality in all living organisms (perhaps with the exception of vegetable growths), so that they are affected disagreeably, even injuriously, by chemical rays whenever these exist in sufficient intensity.

As proof of this assumption, reference is made to the power of light in destroying bacteria, in doing which the chemical rays are most active. On the light-shunning dew-worm red light acts as darkness, violet as daylight. The same is the case with the proteus.

The shiftings of color on the chameleon under the influence of light depend on the fact that those cells of the skin which are rich in pigments lie near the surface when in light, but deeper when in darkness. Paul Bert has also found that neither red nor yellow light works upon these cells, but that both the blue and violet light act so much the stronger. It has even been shown that horses and horned cattle get erythema from the chemical rays on such portions of the body as lack pigment—a fact which Widmark had previously proved concerning rabbits. The injurious effect of the chemical rays on human beings has already been stated.

The acute effect (which is discernible macroscopically) presents all stages from slight irritation and redness to strong inflammation with blisters which contain liquid, and desquamation of the epidermis. The stages depend on intensity, light and the quality of the chemical rays; and in this connection it is noticed that of the artificial lights, lamplight contains relatively fewer, but electric-light relatively more chemical rays than sunlight. The stage further depends on the duration of the influence and on the greater or less pigmentation of the skin. Unlike every other inflammation which lasts the same length of time it leaves pigmentation after it. It is distinguished from inflammation resulting from heat by its not appearing immediately after exposure to that which causes it, and that it reaches its climax a half or a whole day later.

That the skin is most easily affected in spring depends, says Finsen, on the fact that during winter time the pigment wears away with the epidermis, and the skin is left less protected in consequence. The bridge of the nose and the cheeks are most affected. But with glacier tourists who are subjected to reflected light, the rays coming from below, the skin under the nose and chin is most affected. Boat-racers get a typical sun-erythema on their bared arms during the spring, and the militia on their faces at the same season.

The Russian physician Maklakoff brought on a severe erythema like that of the laborers when he witnessed a smelting of metal by means of five hundred accumulators. This erythema could not be ascribed to development of heat, which was relatively slight, which proves what Professor Widmark said of the effect of the chemical rays on the skin (as previously stated) to be true; that is, that it is not the caloric rays, but principally the ultra-violet ones, that cause the well-known effects of light on the skin.

Following this, Finsen attempts to search out the histological processes of the inflammation in question. To this end, he has made use of tadpoles, whose tails

he examined under a microscope after exposing them to sunlight from which the caloric rays were excluded; thereupon the usual signs appeared in and around the capillary vessels, but, besides this, the blood-corpuscles changed from oval to round. It is well known that light acts as a contractor on living protoplasma. Finsen thinks the influence of light on the capillary vessels should be taken as explanation of the inflammatory process in the skin. He bases this assumption first and foremost on the fact that the pigment which forms a means of protection from the chemical rays lies alongside the capillary cells, and, further on, the fact that no living tissue absorbs so much light, and at the same time such a mass of violet rays, as the blood.

"Now that we have seen," says Finsen, "what strongly acute affections the chemical rays can produce, we can easily understand that even several chronic skin troubles stand in relation, both as to etiology and its subsequent course, to these rays. Of such diseases, we already know pellagra, xeroderma pigmentosum and Hutchinson's summer prurigo. But as the chemical rays have been so recently recognized as irritants of the skin, it is possible that the list of such diseases will be extended.

"In another category may be placed such diseases as, without being etiologically dependent on the chemical rays, are unfavorably affected by them, and among these we should place small-pox. It is impossible to say at present whether in time we shall come to reckon with the latter other exanthematic diseases or skin diseases, but it seems not impossible when the chemical rays can act so injuriously upon a healthy skin. As to small-pox, we see by concurring reports, and most recently that of Dr. Svendsen, that when the chemical rays are shut out the vesicles dry up without becoming purulent, and thus suppurative fever is avoided, in consequence of which the disease is less dangerous, of shorter duration, and, when ulceration is eluded, less painful. By this means scarring is obviated."

It seems to be undisputable that on the exclusion of the chemical rays depends the non-purulent character of the vesicles and the changed character of the disease. Still the author declares that a complete explanation cannot at present be given. But while awaiting further examination of the process, he thinks it may be stated thus: the power of chemical rays to produce irritation acts as a plus quantity, it increases already existing skin inflammation and prolongs it, so that the conditions become more favorable for the development of micro-organisms.

As the proposed treatment for small-pox is not, according to the author, a special thing for this disease, but a new therapeutic principle, he recommends physicians, especially those treating epidemic diseases, to try its effect on other exanthematic diseases, such as measles, scarlet fever and erysipelas.

As a last addition to this subject of treatment of small-pox, an article appeared in *Hospitals Tidende* for November 8th, written by the well-known medical historian, Prof. Julius Petersen. "The interesting communications," he writes, "of Prosector Finsen and Dr. Svendsen have strengthened for me, as medical historian, the old rule, which I often advanced, of the constant working in a circle in medicine—a circular movement which consists of the reappearance of the old permanent principles, though newly applied and fortified through the more exact investigations of the present." Then he tells how it was customary, even

in the Middle Ages, to make use of red curtains and cloths in the treatment of small-pox. For example, in the "*Rosa anglica*" (about 1300) of the English royal physician Gaddesden, we read that when the king's son had small-pox "everything used around his bed was of red, and that it is a good cure. I cured him without pock-marks (*sine vestigiis*)."

When small-pox was rife in Denmark in the seventeenth century, Thomas Bartholin spoke of this recognized method of treatment; and in the eighteenth century Fouquet wrote from Montpellier that in his childhood, "*on vetaissait les petits vérolés de trap ecarlate et que l'on les tenait dans les lits formés des rideaux de la même étoffe.*" Further on, in the "enlightened period," the method was denounced as superstition, and was forgotten entirely by historians of medical practice. And there was no rational foundation for its use. "It is," says Professor Petersen, in closing, "investigators of the present day who have the whole honor of having found an undeniably more satisfactory and exact scientific foundation for the old empiric fact."

Clinical Department.

A CASE OF UTERINE TUMOR.¹

BY DR. E. W. CUSHING, BOSTON.

Miss E., of New Hampshire, forty years old, came under my care this winter with the following history:

Was well until six years ago, when a small tumor was noticed, which increased gradually. There never was any menorrhagia. She consulted various physicians, both at home and in this city; but from all she received advice to wait and see if the tumor would not disappear at the menopause. It has grown steadily and rapidly, however, until now her condition is very serious — health broken, heart rather feeble, digestion impaired, respiration impeded. She realizes that she cannot live much longer without surgical relief.

At present the patient is slight in figure and much emaciated. The abdomen is occupied by a large tumor, which is so soft as to give an indistinct sensation of fluctuation. The pelvis is filled with the lower portion of the tumor, which is smooth and not very hard, and continuous with the uterus.

Diagnosis, probably a soft myoma.*

On opening the abdomen the tumor was exposed, and as it seemed too soft for a myoma it was punctured with a trocar, but no fluid escaped. Incision was prolonged, and the upper part of the tumor was delivered through the opening. It was seen that the growth had lifted the layer of peritoneum from the posterior abdominal wall, and had separated the folds of the broad ligament; so that the large intestine appeared to be adherent to the tumor high on its posterior surface. The apparent adhesions, however, were really the insertion of the mesentery, as is often seen in such cases, but not always understood at once.

The outer part of each broad ligament, with the ovarian arteries, was tied off; but it was impossible at this stage to tie the uterine arteries, as the tumor could not be lifted from the pelvis. On each side were several great veins, each larger than a lead-pencil.

To free the tumor, the thin capsule of peritoneum and uterine tissue was divided by a circular incision,

some four inches above the brim of the pelvis and well clear of the mesenteric insertion. On the left side a little spurt of clear fluid, from what appeared to be a large vein, was noticed.

By enucleation of the tumor and clamping of vessels the growth was lifted from the pelvis, and an attempt was made to secure the uterine arteries for intra-peritoneal treatment of the stump; but, owing to the bulk of the tumor and the size and variety of the vessels, this method was abandoned, and a rubber tube was used as a constrictor, the tumor cut away, and the stump treated extra-peritoneally, as usual.

When the tumor was removed a deep cavity remained bare of peritoneum on each side, so that at the bottom of each side of the pelvis the iliac vessels were visible. On the right was a large, tortuous tube, dilated in some places more than others. This had been carefully avoided in tying off the vessels and separating the tumor; and it was well that it had been spared, for its relation with the iliac vessels and with the broad ligament in the region of the bladder showed that it was the ureter.

On the left, near the iliac vessels, where the ureter should be situated, was found the cut extremity of a large vessel which had already been ligated. This was close to the ligature which had tied the ovarian artery, but it was also close to the iliac vessels, the peritoneum, which before had been pulled up, now having retracted. Convinced that this vessel was the ureter, I took off the ligature, and after some search found the corresponding end; and then came the question what to do. I knew of no instance where a ureter had been severed and united. Simon, on cutting a ureter, had gone on and extirpated the kidney; and Greigg Smith advises this procedure. The patient's condition, however, would not permit of such a course at that time; and the choice offered was between bringing the upper end of the ureter out through the wound, leaving the extirpation of the kidney as a future operation, or suturing the two ends of the ureter together, hoping for union if possible, but providing for leakage if it should occur. The latter course seemed preferable, for I saw no reason why a ureter should not unite as well as an intestine if properly brought together, and I had had some experience which led me to believe that the ureter had more capacity for closing a partial defect than is commonly supposed. I therefore sewed the two ends of the ureter together with two silk and one catgut sutures. I was afraid to put in more, not being absolutely sure that the distal cut end was really ureter, and also fearing that more stitches would obstruct the lumen. I therefore used the catgut, to hold if possible, and give way if necessary.

All this seems long to describe; but the decision had to be made in a minute or less, and the suturing did not take long. After thorough irrigation of the abdominal cavity, I laid the ureter where I thought it belonged, and pressed it against the floor of the pelvis on the left with the middle of a square of iodoform gauze, into which I packed strips of the same material after the manner of Miculicz. The cavity in the right side of the pelvis was similarly packed with gauze, and a glass tube carried to the bottom of the pouch of Douglas. The stump was fastened in the angle of the abdominal incision as usual, and the tube and gauze were brought out of an opening separated from the stump by two sutures.

* Read before the Obstetrical Section of the Suffolk District Medical Society.

I now felt sure that if the severed ureter should leak I could lead the urine to the surface without danger to the abdominal cavity; and my plan, if all the urine from that ureter came through the wound, was to turn the current through the lumen of the cervical canal into the vagina, and then later turn the extremity of the cervix uteri into the bladder, and so finally lead the urine where it belonged. Happily, this is not likely to be necessary.

The patient did very well after the operation; but on the fourth day the discharge from the gauze on the left side smelled ammoniacal. The gauze on the right side and the glass drain had meanwhile been removed. By the next day it was clear that some urine was escaping from the abdominal wound. The amount passed from the bladder had from the beginning been normal in quantity. The last of the iodoform gauze was now removed from the wound, and a rubber tube carried down to the site of the ureter. By care and some ingenuity the stump had been kept dry, and on the tenth day it was cut away. The quantity of urine escaping from the tube, which was never more than three ounces during twenty-four hours, now diminished; and the tube, which had been shortened, was taken out about the fourteenth day, the whole wound treated with balsam of Peru and covered with gauze and absorbent cotton.

The patient is now sitting up, and wets one napkin over the wound during the day and one during the night. I have taken care to preserve the patency of the cervical canal, and have closed in the skin so that the opening of the urethral fistula is close to the upper end of the cervical canal. The discharge is slight, however, and I hope it will finally cease without further operation.

NOTE. — November, 1893, the patient wrote that the fistula had closed entirely, that she was in perfect health and able to take active exercise of all kinds.

Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.
(Concluded from No. 1, page 11.)

SPASMODIC TORTICOLLIS.¹⁴

HOFFA has collected the recent literature on this subject, and reports the opinions of the different writers. Paralysis of the sterno-cleido mastoid follows the operation of section of the spinal accessory nerve. Cure of the spasm does not usually follow immediately after the operation, as slight spasm of the other muscles follows, but these secondary spasms gradually diminish and in time entirely disappear. If this is not the case, Keen advises the section of the posterior branch of the cervical nerves. A head support is needed for several months after the operation, and the employment of massage is advised.

SCIATIC SCIOLIOSIS.¹⁵

Fischer and Schouwald give observations on seventeen cases, and describe the two forms which occur; the one, the homologous form in which the concavity, and the other, the heterologous, in which the convexity is toward the affected side. The former is caused

by a condition of irritation produced through the short anterior branches of the lumbar plexus, and when there is no implication of the lumbo-sacral muscle. The second type is caused by a weakness of the sacro-lumbar muscle which is due to affection of the posterior branches of the plexus supplying it. When both groups of nerves are affected, either variety is assumed, the one or the other predominating according to whether the disease affects one or the other to a greater or less degree. The second form may develop rapidly in those cases where the anterior branches either are not affected or only to a light degree, and it may also develop when the pain becomes located in this region, in those cases which appear early as the first variety. When both sets of nerves are affected to the same degree, the patient attempts to assume whichever attitude gives most ease, and the form may not then be well marked, but if improvement occurs in one or the other groups, the variety then becomes well defined.

In general, it can be said that the irritation of the anterior branches causes the homologous variety when the lumbo-sacro muscle is not affected. The heterologous variety occurs when this muscle is weak.

The following differential diagnosis is given: In the second, the patient complains of fatigue in the back, before the onset of the disease, during extension of the spine, while this symptom is wanting in the homologous form. Also the heterologous form is prolonged beyond the period of pain, on account of the weakness of the sacro-lumbar muscles, whereas the homologous disappears with the pain. The heterologous form never changes to the homologous, while the reverse often occurs suddenly. Both varieties have, however, one symptom in common, namely, that of the forward inclination of the trunk. In the second variety it is due to the action of the sacro-lumbar muscles; in the former, to a relaxed condition of the muscles supplied by the anterior branches of the lumbar plexus.

Other references to this subject may be found, by Higiea and by Remak.¹⁶

HOFFA'S OPERATION FOR CONGENITAL DISLOCATION OF THE HIP-JOINT.¹⁷

Denucé, of Bordeaux, reports a case in a child of six, operated upon by him. The child entered the hospital September, 1891, with characteristic deformity of the hip. The left trochanter major was three centimetres above the Nélaton line, while the right was upon that line. According to the statement of the parents, the shortening had increased.

An incision was made seven centimetres long, parallel to the axis of the femur, reaching four centimetres above the top and three centimetres below. The muscles were divided in the course of the fibres of the gluteus maximus, the capsule laid bare and incised. The insertion of the muscles on the great trochanter was then divided with scissors. The head of the femur was found to be slightly flattened and oval in shape; some granulations were present at the point of the insertion of the round ligament, which was entirely wanting.

If traction was made upon the foot the head could be pulled down somewhat, but not sufficiently to place it in the cotyloid cavity. The muscular insertion of the pyramidalis, the obturator internus and the gemelli were pushed backwards, and a portion of the cartilage

¹⁴ Zeitschrift für Orthopädie Surgery, 1892, p. 315.
¹⁵ Wiener med. Woch., 1893, Nos. 16 and 21.

¹⁶ Deutsch. med. Woch., 1892, 27.

¹⁷ Revue d'Orthopédie, p. 106, 1893.

of the great trochanter was cut at the point of muscular insertions. After this, the head of the femur could, under traction, be pulled downward. The cotyloid cavity was found to be small and of a triangular shape. The loose tissue in the cotyloid cavity was incised to the bone, and a flap detached with the periosteal elevator (curved on the flat), leaving the upper portion undivided and attached. This flap was raised by means of a silk suture passed through the edge, and the head of the femur was reduced underneath this cartilaginous flap into the cavity. The cavity was deepened by means of a gouge, and after the operation it was found that the head did not have any tendency to slip out of its new position. The capsules and flaps were sewn together. A traction by weight of four pounds was applied. The muscles, cartilages and the capsules were sewed with catgut, and a slight orifice left for drainage. The skin was sutured by silk. Iodoform gauze dressing. Plaster-of-Paris bandage was applied.

The temperature was raised the night following the operation and on the following day, but afterwards dropped. The patient was allowed to walk on the 30th of October, and it was found that the lordosis had entirely disappeared. The 15th of November the patient was again seen, and was found to walk well. The patient was allowed to walk without crutches on the 10th of November, and when seen a year after the operation, the patient was in good condition. There was no lordosis, and but little scoliosis; the muscular atrophy had diminished; the head of the great trochanter was not above the Nélaton line. The difference in the length of the legs was about two centimetres, having been five centimetres before.

Lorenz²⁰ reports an operation on a child of seven, and does not agree with Hoffa in thinking that the contraction of the muscles is the chief hinderance to the reduction of the dislocated head, but the muscles which arise from the tuberosity of the ischium; that is the adductive group. He considers that the reduction can be facilitated by myotomy of these muscles, and that the joint should be opened from the front, and reports four cases operated upon in this way. In one, a child of about five years of age, the reposition took place without opening the joint. One of these patients was fifteen years of age.

Karewski²¹ disagrees with both Hoffa and Lorenz, and thinks the difficulty in reduction lies chiefly in the head of the femur and in the improper shape of the acetabulum. He reports five cases. In most of the cases the head remained after operation in the new socket. An equality of length of both limbs was not gained, through the faulty formation of the neck. The good results were obtained by the use of appliances carried out for a long time. In two cases, where the apparatus was worn only three months, the head was dislocated upward again. In two, where the treatment was thoroughly carried out, the gait was almost normal.

Karewski enlarges the acetabulum by means of a chisel, dividing the cartilaginous tissue over it to make a place for the head. In a few instances he has driven a nail into the ridge of the acetabulum, keeping it there for six or eight days.

Hoffa, in the same publication, replies to both these surgeons, and states that he has operated in 24 cases, and that the definite results will be published. He

prefers an early operation, and claims satisfactory results. He does not think that the resistance of the adductor muscles is of importance, or that in all cases there is a faulty shape of the head of the femur to an extent of preventing reduction.

Nota,²² of Turin, has operated by the method of Paci upon 12 cases, of which five were double and seven were single; that is, he has operated eighteen times, eleven with good, one with partial, four with negative, and two with doubtful results. He thinks that a cause of the difficulty of a permanent cure of the deformity sometimes lies in the faulty shape of the pelvis, which is either too flat or too oblique, and that, combined with a shallow acetabulum and a rudimentary edge, promotes dislocation after reduction of the deformity. Nota regards an apparatus as necessary after the operation, and thinks that good results are largely due to this. He regards it necessary to retain the limb after the forcible reduction (the method of Paci) in a position of extreme forcible rotation outwards.

Panzeri is not convinced of the value of the method of Paci, as he does not see how the development of a new joint can be brought about simply by violent reduction.

Oliva is of the same opinion, and mentions a case in a girl of twelve operated on by him according to Hoffa's method without positive benefit, though he favors this operation in young children.

Panzeri prefers the operation of Hoffa in children from three to fourteen; in old cases the results are not good. Under three, he would advise the method of Paci and mechanical treatment.

SCOLIOSIS.

Wisser²³ has investigated the deviations of the spinal column in 515 school-children. These children were from seven to eleven years of age: 292 boys and 293 girls. Tables are given to illustrate the observations. At the beginning of the school-year a large percentage of habitual curvatures were discovered; some of them of the typical form, others of various curves. He also found that a larger percentage of curves was found in the boys than in the girls at the age of seven. The percentage of curves he found to be 41 per cent. of the boys at the end of the first school-year, and 33 per cent. of the girls. The second and third year the number had increased from 40 to 49 per cent. The increase in pathological cases was not in proportion to the longer course of study, and for that reason he concludes that the school is only one of the factors in the development of scoliosis.

Redard²⁴ calls attention to the connection between scoliosis and flat-foot. He finds this common in primary lumbar scoliosis on the side of the convexity where the lumbar curve exists.

Heusner²⁵ considers that there is a definite relationship between flat-foot and deformity of the lower extremities and the existence of scoliosis, and further claims that the element of rickets is an active one, not in children alone, but during the period of adolescence. He gives a series of observations from which his deductions are made, having examined 1,000 patients at Barmen, of whom 335 had scoliosis; 283 of these

²⁰ Centralblatt für Chirurgie, 1893, No. 31.

²¹ Zeitschrift für Orthopädische Chirurgie, 1892, Bd. II, Heft 3.

²² Zeitschrift f. Orthop. Chir., 1892, p. 273, Bd. II, Heft 3.

²³ Centralblatt Zeitschrift für Orthopädische Chirurgie, p. 286, Bd. II, Heft 3.

²⁴ Gazette Medical de Paris, August 6, 1892.

²⁵ Compte rendu du 21 Congrès de Chirurgie Allemand, 1892.

showed a flat-foot. Of 663 men, 288 had scoliosis; of 837 women, 147. Of the 283 patients having flat-foot, 167 had scoliosis; and of 717 patients without flat-foot, only one-fifth showed deformity of the back. He also examined 250 infants at the orphanage, and found among these 64 with the back deformity, and 65 with flat-feet. Of the 65 cases of flat-foot, there were 24 which showed back deformity; and of 185 children without flat-foot, there were only 40 who showed a lateral curvature. Of 143 boys, 26, and of 107 girls, 28, showed a lateral curvature.

He considers that the treatment by muscular exercise to be of paramount importance, and useful in all cases; but, in addition to this, he employs the treatment of correction by mechanical force, and for this uses an apparatus which he describes and pictures in his book. This consists of an inclined plane, on which the patient rests, at the same time having head-suspension, and by means of broad leather straps weighted by sand-bags, pressure is made on the curves in the direction of correction, and this carried out for an hour or two every day. While in the apparatus efforts are made at forcible inspiration.

Schede²⁵ describes his apparatus for forcible correction. Schulthess comments upon this, and states that he has seen better correction by means of this appliance than by that of Lorenz. Schede reports excellent results, and mentions the almost entire disappearance of projection of the ribs in a sixteen-year-old child under the use of this appliance.

Messner²⁶ reports in the case of a twelve-year-old child a year after infantile paralysis the development of a paralytic curve, although the muscular paralysis had apparently passed away. The appearance was exactly as if the right side of the thorax had been imperfectly developed, and this seems to be proved by measurement. The difference between this and the ordinary scoliosis lay in the less amount of rotation. The treatment consisted in massage and electricity.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. OBSTETRICAL SECTION.

G. H. WASHBURN, M.D., SECRETARY.

REGULAR meeting Wednesday, February 22, 1893,
DR. F. H. DAVENPORT in the chair.

DR. JOSEPH PRICE, of Philadelphia, read a paper
on

OBSTETRICAL ASEPSIS.¹

DR. EMMA L. CALL: The lying-in department of the New England Hospital was established in November, 1862, and from that time till October 1, 1892, 8,259 patients have been delivered there.

In order to mark the progress of modern methods, in its effects on the health of maternity patients, it will be convenient to divide the work done into three periods of ten years each.

During the first ten years, namely, from 1862 to 1872, the hospital consisted of three small houses on Pleasant Street. The wards were necessarily crowded and inconvenient and the general surroundings not of

the best. At this time the hospital was the only lying-in hospital in Boston, and consequently received in emergencies many patients brought by the police from the worst parts of the city. The use of the clinical thermometer was quite unknown, so that we did not have the aid of that valuable danger-signal, while the employment of antiseptics in the modern sense of the word was not understood.

During this period 1,009 women were delivered, with a mortality from septic diseases of twenty, or about one case in fifty. These fatal cases occurred chiefly in two epidemics, one in 1867, the other in 1872. In addition to the twenty fatal cases there were, of course, a still larger number of septic cases, which after varied periods of illness, escaped with their lives.

In 1872 the hospital was removed to Roxbury, and a new cottage was built especially for the maternity cases. Temperature records were kept, and very early in this period, the use of carbolic acid for hands and in douches was begun. During the latter part of the period, frequent douches with carbolic acid, permanganate of potash, phenol, etc., were a part of the routine treatment of every case.

From 1872 to 1882 the number of cases was 1,026, with nine deaths, the mortality being reduced to one in 114. Nevertheless the records give us nearly every year cases of sepsis that were only pulled through with anxious care. There was no decided epidemic during this period, which was probably due largely to the fact that in 1879, an annex cottage was added, to which septic cases were at once removed and cared for by separate doctors and nurses.

In 1882 the maternity cottage was closed and thoroughly repaired and replumbed, since which time the records have been much more satisfactory.

From October, 1882 to October, 1892, among 1,224 cases (200 more than the other periods) we have lost but two patients from septic diseases, reducing our mortality to one in 612. These two deaths occurred in 1884, since which time we have had 897 cases without a death.

In the latter part of 1886 the use of antiseptic pads and of bichloride solutions for personal disinfection was established, and has been continued, with slight modifications, ever since. Patients receive an antiseptic vaginal douche at the beginning and end of every labor, and an intra-uterine douche after complicated labor. After labor the antiseptic pads, with irrigation of the external genitals before and after each urination, and rigid disinfection of the hands of the attendants before and after touching each case, is practised. If fetid lochia appear, bichloride vaginal douches are ordered; if this is accompanied by chill or decided rise of temperature, an intra-uterine douche is given. If the symptoms do not quickly subside, curettement of the internal surface of the uterus is employed.

Since this method of treatment has been followed, the number of cases which we have been obliged to isolate has steadily diminished. Most of these cases have occurred among patients who have come to us in depressed conditions of health, and their removal to the annex has stopped the trouble. Thus, during the last three years, we have had one case of septic peritonitis, and two of extensive diphtheritic deposit, occurring in different years. Not the slightest trouble among the other cases resulted from these.

In the spring of 1892 we again removed to our new

¹ See page 32 of the Journal.

²⁵ Deutsche Med. d'Orthopédie, No. 12.

²⁶ Centralbl. Chirurgie, 1892, No. 44, p. 97.

"Sewall Maternity," which has been fitted up with all the latest sanitary appliances, and where we hope the next ten years will give us still better records, than those of the past.

DR. J. G. BLAKE: I have listened with pleasure to Dr. Price's paper. During the twenty years preceding the last ten I had a large number of cases of labor, and during that time there was but little attention paid to antiseptics. I must say that I was singularly fortunate, however, and had but a small mortality. The great benefit resulting from it has been conclusively demonstrated by the results in the Lying-in Hospital. I think that favorable as they have been in the New England Hospital those of the Boston Lying-in Hospital are even better. We all remember the paper of Dr. Richardson in which he showed that in one thousand births they had had no death; and that, in fact, any rise of temperature more than one or two degrees was of rare occurrence. Unfortunately, in private practice the necessity for antiseptics does not seem to be recognized. This was brought forcibly to my attention in the uterine ward of the City Hospital, where during the last summer term of service I was called upon to curette eight or nine cases where patients had had chill, and offensive lochia and all the conditions pointing to septic poisoning. Under the treatment which we all recognize now, and which it is not necessary to speak of in detail, I believe we had no death. One woman came in in a condition which precluded recovery. If it could be made a legal obligation that doctors and midwives should be compelled to fully carry out antiseptic precautions, I think a great many lives would be saved to the community. Of course, amongst a certain class of physicians such measures are taken, and the mortality has steadily diminished; but unfortunately a large number do not fully appreciate the necessity. I believe I took that side of the question myself in the Obstetrical Society some years ago. I argued that you had susceptibilities on the part of patients, and you could not avoid septic poisoning. Dr. Richardson's paper cleared my mind of that cant; and I am a strong and earnest believer in the absolute safety attending it. If I had my way, I should make it a criminal offence if complete antiseptic precautions were not always taken.

I want to thank Dr. Price for myself and for those who were present at the operation at St. Elizabeth's Hospital this morning, for the careful, painstaking, minute carrying out of all the details of what to me was the most perfect operation I ever saw.

DR. PRICE: Boston has done more, perhaps, than any educational centre in our country for saving women. The work of Dr. Richardson and a few others cannot be estimated. It would be difficult also to estimate that great contribution of Dr. Homans. Hundreds and thousands of lives have been saved by it. I want to suggest that you read more papers. I find the profession ignorant regarding the simple precautions of cleanliness. In saying this I am not criticising Boston or Massachusetts in particular.

I am glad to hear the results in the New England Hospital. Two deaths in twelve hundred cases is hard to beat. If that means two deaths from septic cases it probably can be beaten.

The history of maternity hospitals, mixed and special, is exceedingly interesting. The mortality has varied from one to forty per cent. Several maternity hospitals have been closed. A satisfactory solution

of the shocking mortality in some hospitals can be reached when we look into matters a little. For instance, in one hospital a large sponge was used for months and years sponging patients off after delivery. This indicates that gross carelessness and reprehensible filth existed in many maternity hospitals. Some of the old nurses washed their hands superficially once a day. The towel was washed perhaps once a week. In the mixed hospitals the resident physician attended to a patient with erysipelas, and went without washing the hands to attend to a woman in labor.

I have always felt, and still feel, that maternity hospitals should be used wisely for educational purposes. The rich have to take care of the poor, and I feel that the pauper element of society should be wisely and humanely used for educational purposes, that we may have more finished physicians and more good work, and we will not attain that acme of perfection in any specialty until we have that condition of affairs, until directors and trustees realize the importance of practical education in every public institution, and until all material of that class be used wisely and humanely for educational purposes.

Dr. Price then spoke of the details of the work in the out-patient department of the maternity hospital with which he was connected. Out of eight hundred cases a year attended by the students among the poor of the city, there were sometimes one or two genuine cases of child-bed fever. Usually these cases could be traced to some neglect of cleanliness on the part of the student. In some instances scrupulously clean men had attended women in labor after caring for surgical cases, and without mischief. He had himself attended women in labor after treating all sorts of contagious diseases, and had never seen any harm arise from it. He saw no danger in this, provided a man kept himself scrupulously clean.

At the Retreat in Philadelphia patients were admitted two weeks before labor, and remained four weeks after. This he considered very important. The plumbing was entirely out of the building, which was also a very important matter, and the effect of which could be seen in the temperature charts. Patients, upon being admitted, received a thorough bath, were given a laxative, and, if there was a suspicion of renal trouble, the urine was examined. The patients receive two soap-baths weekly; the bowels are kept open; and they improve wonderfully in general health. The patients admitted two weeks before labor always do better than those admitted in labor. When a patient complains of labor pains, she receives a bath and a vaginal douche of corrosive (1 to 2,000), and goes into the clean delivery room. The toilet is made by a nurse who has nothing to do with puerperal wards. Both nurse and physician bathe before entering the room, and scrub again after entering. But one examination is made, if everything is favorable, until the head is ready to clear the perineum, when the physician sits down and superintends the delivery. After the delivery a vaginal douche is given, and the patient receives the occlusion dressing of Dr. Richardson. Nothing short of extravagance in maternity work will give a *nil* mortality. In the Retreat, out of 1,200 cases, there has been no death from any cause.

"I regard vaginal douches important, particularly in women with a relaxed vaginal outlet, in order to protect the child's eyes against acrid and irritating discharges; and if specific virus lurks there, it is the

more important that we should protect the eyes of the infant. If every woman in Massachusetts should receive in the next ten years the antepartum douche, and receive the same toilet as at the Retreat, you would reduce your blind asylums from five to one in the next ten years. All dirty instruments, and the old dirty bag which has been carried ten or fifteen years, should be discarded."

DR. E. W. CUSHING described

A CASE OF UTERINE TUMOR.²

DR. PRICE: This subject of hysterectomy I have been much interested in. I almost feel like apologizing now for a big tumor. This operation has been criticised considerably lately, and I want to say in all fairness to the operation that I know none giving me at least better results. I consider the early removal of the appendages in disease one of the most valuable operations in surgery. After the tumor grows large it becomes a very formidable operation. The size of the tumor impairs the health of the patient by interfering with breathing and by producing pressure symptoms. These growths seem to be on the increase. More of them grow now after the menopause than years ago. I have two or three patients now who have waited for the menopause, and have had the benefit of well-directed palliative treatment; and these growths have continued to grow, notwithstanding the menses ceased four or six years ago. I have removed a good number of these tumors between the ages of fifty and sixty; and the oedematous form, the muscular form and the multinodular form seem to grow more after the menopause than they did years ago. That has been the observation of a good number of operators at home and abroad. A few years ago but little was said about the soft variety of myomas. At present about every operator has something to say about the oedematous forms. They grow rapidly, they are quite symmetrical, and, as a rule, very easy to deal with. It is a quick operation.

Dr. Cushing has alluded to injuries of the ureter. I believe Keith severed one or both in one case. Mr. Tait opened the bladder in a hysterectomy he did in Albany. The bladder injuries, if the patient lives, always close; but the ureters do not close so kindly, and they are hard to manage. I have had injuries of the ureters in two cases out of 101 supravaginal hysterectomies. Dr. Cushing has called attention to the method of dealing with these capsules. Until one learns how to make a pedicle, he had better keep his hands off of them. It is of vital importance first to learn how to make a pedicle; and if you cannot make pedicles, you cannot deal with them successfully; you are apt to include bladder or something in the pedicle. I am satisfied from my own experience that you should never use a temporary clamp, that you should simply use a large, long-bladed, hæmostatic forceps, and never a constrictor before severing this great capsule. I am satisfied that many of the early operators included one or both ureters in the pedicle, and that to that may be attributed some of the deaths from so-called suppression, etc.

DR. H. W. CUSHING showed two tubes and ovaries removed on account of inflammatory trouble. The tube on the left side was largely dilated, and there was an abscess situated apparently in the left ovary. This communicated with the vagina and with the rectum.

² See page 37 of the Journal.

It was removed by enucleation, breaking up adhesions, ligating and cutting off. Two small fibroids were also taken from the uterus of the same patient.

DR. E. W. CUSHING showed specimens of pus tubes.

DR. PRICE: Our present idea of the pathology of pelvic inflammatory troubles has been slow in gaining ground. In New York I do not believe they have as yet accepted it. It would seem from what they are doing at present that every woman suffers from endometritis, that every patient must be curetted. Now, in the presence of those huge abscesses, of course, the woman has a discharge. In this case the woman did discharge from the bladder and bowel. Why not curette the bladder? The indications are as clear as for curetting the uterus, and yet that goes on for this condition of affairs in New York. There is but one treatment in these cases. As yet I have never found a pelvic abscess wholly independent of ovarian disease except in traumatism or criminal abortion. A good number of these cases are treated for typhoid fever, appendicitis, dysentery, etc. They are not examined. There has been of late a good deal of conservative talk and writing; but as this conservative talk goes on, the complications increase and our cases are getting worse. They are neglected. All this talk means a higher mortality for all of us.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPÆDIC SURGERY.

STATED Meeting, October 20, 1893, W. R. TOWNSEND, M.D., Chairman.

A CASE OF CLUB-HAND AND CLUB-FOOT.

DR. REGINALD H. SAYRE presented a little boy with a congenital club-hand. There was an absence of the thumb, radius, and certain of the carpal bones, and also a marked curve in the ulna. This last was corrected by subcutaneous osteotomy. Some weeks later, an open incision was made, and it was found that the ulna did not articulate with the carpus, and that there were some ligamentous bands which bound down the hand at right-angles to the forearm. These bands were divided, and an attempt made to bring the hand down, but the flexor tendons, particularly the flexor carpi radialis, were so short that it was not practicable to bring the styloid process clear of the carpus. He then removed the os magnum and the unciform, cut off the styloid process of the ulna, and put the bone into the cavity thus formed. Another time he would not destroy the ligaments on the posterior part of the carpus, on account of the difficulty experienced in keeping the bone in place. There is still a noticeable tendency for the hand to turn to one side, as there is a very small surface on the ulna out of which to make a wrist-joint.

He had seen a picture of a similar case where the carpus articulated with a facet on the side of the ulna, making a good joint. Under such circumstances, one might cut the ulna just above the articular surface, and turn it at right-angles to itself, thus bringing the joint surface in its normal position.

His patient also had a congenital club-foot, which was operated upon before the hand was treated, by the use of subcutaneous incisions and Bradford's instrument. This boy also had a curvature of the spine, and the right upper and lower extremities

seemed to be more developed than those on the other side. Since the deformity of the foot had been corrected, there had been a notable improvement in the lateral curvature.

The speaker said he had only seen five cases of club-hand. In one case under treatment at present, an infant of three or four months, plaster-of-Paris dressings are applied, and changed at short intervals; and he expected a fair result. In the other cases there were simply contractions of the tendons, but the skeleton was apparently normal.

A CASE OF MYOSITIS OSSIFICANS, WITH MULTIPLE EXOSTOSES.

DR. V. P. GIBNEY presented a boy, ten years of age, who was admitted to the Hospital for Ruptured and Crippled for the first time when five years old. At that time a diagnosis was made of myositis ossificans affecting the levator anguli scapulae. He was taken into the hospital with the idea of severing the strip of ossified muscle, but the parents would not consent to the operation, and removed the child. He did not return until last spring, when he was seen by Dr. Townsend. He stands with his head tilted a little to the right; the upper extremities are bowed so that the thumbs touch, and the elbows are separated some distance from the sides. There is a bony enlargement springing from the middle of the jaw, about the size of a split pea. He is able to bring his neck up to a vertical bearing, but his head soon falls down into the position already noted. The rotation of the head is limited to a very small arc, about ten degrees. The right clavicle has an extra curve at its outer half, the greatest convexity being toward the spinal column. The outer end presents an appreciable enlargement, while the sternal end is subluxated forward and seems to be ankylosed. The left clavicle presents an unusual curve throughout its whole extent, the convexity being towards the neck. Springing from the middle is a bony, irregular mass, elevated half an inch. The base of the tumor spreads out into the clavicular portion of the pectoralis major, and continues into the pectoral portion, terminating in an irregular mass in the anterior wall of the axillary space, deepening this space very much. Over the articular surface of the second rib with the sternum is a small exostosis, which shades off into the mass just mentioned. There are similar exostoses over the sternal end of the third and fifth ribs. There are no such bony masses on the right side. The respiratory movements of the thorax are limited. Beginning about the middle of the fifth rib, just in front of the axilla, is a bony enlargement, triangular in shape, which extends backward and downward, taking in the whole area of the latissimus dorsi and the serratus magnus. He was re-admitted to the hospital on March 9, 1898. With the idea of freeing the shoulder, the bony tendon of the latissimus dorsi on the right side was divided, and a piece of bone about one inch wide and very dense and hard was excised, but new bone was thrown out very soon, and the mass became if anything more unyielding than before. There was also a peculiar osseous tumor over the right tendo-Achillis, about the size of a peanut, which interfered with his wearing a shoe. This was dissected out at the time of the other operation, and has not recurred.

About the time of this operation an old case returned which he presented to the Pathological Society many

years ago. An account of it was published in the *New York Medical Record*, 1875, Vol. X, page 747. She was at that time ten years of age, and first came under his care on September 14, 1875. She had been perfectly well up to December, 1874, when she had an attack of diphtheria, followed by paralysis of the vocal cords. The muscles involved in her case were the latissimus dorsi, the scaleni, and the erector spinae. Her right arm was held down by the tendon of the latissimus dorsi, and she suffered more or less pain in her back. There was also a lateral curvature from lack of muscular tone. At the suggestion of some members of the Pathological Society, she was put on lactic acid; and though no real improvement was noted, it was observed that after a year and a half there had been no further increase in the disease. Since 1884 she has been working at millinery, and the disease has made no further progress.

The boy just presented has been taking lactic acid for the past six months. He has had very little pain.

The speaker said that so far as he had been able to ascertain, the first American case of this kind was published by Dr. Byers in the *New Orleans Journal of Medicine* in 1870. The first reference to the subject which he had found in literature was by Bulhak, who published a dissertation on the subject in 1860. Kummell has reported a case where the ossification probably began in intra-uterine life, since it was noticed as early as fourteen days after birth. When the child was two years of age, there were numerous fluctuating tumors over the back, which ultimately became as hard as bone. Nothing is known of the etiology. There is no traumatic element in the case presented by him.

DR. N. M. SHAFFER said that such cases must be very rare, as this was the first of the kind he had ever seen. He would suggest that the electrical reactions of all the muscles be determined, also the condition of the reflexes, and that a critical examination be made of all the organs. He would classify it as a nervous disease, the changes in the muscles being the result of pathological changes in the central nervous spinal system.

THE TREATMENT OF CLUB-FOOT BY WOLFF'S METHOD.

DR. A. B. SHANDS read a paper on this subject, exhibited a number of illustrative cases, and gave a demonstration of the manner of carrying out the treatment.

DR. SHAFFER asked how many of the patients had been operated upon prior to the adoption of Wolff's treatment.

DR. SHANDS replied that most of them had been operated on previously, but in one of the cases exhibited no operative treatment had been employed.

DR. SHAFFER said that the principle embodied in this treatment was one which he had taught for a long time. By this method one accomplishes with plaster-of-Paris what he had long done, and he thought in a more thorough manner, with his lateral traction shoe. With lateral traction a certain amount of force is applied at frequent intervals. His success had been such as to entirely warrant him in saying that the method just presented is perfectly competent to bring about a cure, and hence, it would be found very useful where more elaborate apparatus is not obtainable. He preferred to make changes in the position of the foot every three or four hours instead of at intervals of a few days, as in the method described in the paper.

The great majority of cases of club-foot under ten years of age can be cured without operative interference.

DR. HENRY LING TAYLOR said he had been much interested in Dr. Freiberg's account of Wolff's method when published in the *Medical News*, for the method seemed very reasonable, and presented certain analogies to one which he himself employed. The method described in the paper was simple and efficient, and placed the proper mechanical treatment of club-foot within the reach of any country practitioner who possessed a clear notion of just what he wished to accomplish.

Last summer while away from the city, he had seen, at the request of a surgical friend, an easily curable case of club-foot in a child two years old. Nothing had been done because the surgeon was "waiting until the child was old enough for an operation." This was a great mistake; if the surgeon cannot construct a proper splint out of metal or wood, he should correct the deformity by means of plaster-of-Paris dressing, according to the method shown this evening. There was not much difference between this method with plaster and that which he had called "the method of continuous leverage." In the former, moderate correction is made, and the foot retained in this position. The correction goes on while the splint is applied, because the foot continues to yield; when it has yielded sufficiently, another correction is made in the splint. This is not very different from applying his leverage apparatus, and following up improvement in the position of the foot by adjusting the straps or bending the side-bar from time to time. The foot is being continuously impelled in the right direction, and is at all times prevented from falling back into a wrong position. This method of Wolff is essentially the same in principle.

DR. A. B. JUDSON said that in children as young as these, the deformity easily yields to persistent and appropriate treatment. Plaster-of-Paris used in this way embodies a lever with points of pressure and counter-pressure; but he preferred to use steel, adhesive plaster and webbing, by which more gradual steps are made toward correction, taking more time, giving no pain, and taking advantage of the weight of the body properly directed on the foot, the same apparatus being used for the after-treatment as long as may be required. He was reminded by Wolff's method of having seen Dr. Gibney many years ago using plaster-of-Paris and a wedge in the reduction of flexion of the knee. He was surprised that there are so many young children whose club-feet are neglected till large calluses form on the outer borders of the feet. Our duty is to extend a knowledge of what may be done with little trouble on the part of the family physician towards correcting this deformity in young children.

Recent Literature.

Manual of Bacteriology for Practitioners and Students, with especial reference to practical methods. By DR. S. L. SCHENK, Professor Extraordinary in the University of Vienna. Translated from the German (by the author's permission) with an appendix by W. R. DAWSON, B.A., M.D., Univ. Dubl., Late University Travelling Prizeman in Medicine. With 100 illustrations, partly colored; 302 pp. with an index. London and New York: Longmans, Green & Co., 1893.

The book appropriately begins with an introductory chapter on the general morphology of micro-organisms, after which bacteriological technique is considered. Then follow chapters on the bacteriological analysis of air, water, foods, putrefying substances and pus. In the remaining chapters the organs and cavities of the body and their contents are discussed from the point of view of bacteriology. Under these various heads, descriptions of the bacteria met with are given, an arrangement of the subject which is quite satisfactory.

The bacteriological methods are, on the whole, well described, though there is much that is disappointing.

A great many staining methods are included, some of which are certainly rarely used and are of no importance. It would seem that in a book of the scope of this one a much smaller number of well-approved methods, selected with the discrimination of a trained bacteriologist, would better suit the needs of those for whom the author writes. We note with pleasure that the use of the double glass dishes of Petrie is recommended for obtaining discrete colonies, though the antiquated and cumbersome apparatus of Koch is still described with great detail and illustrated by figures, some of which have grown familiar in other books on bacteriology.

In the chapter on air we find no mention of the excellent method of Sedgwick. The description of the biology of the various species of bacteria is, in general, unsatisfactory. Numerous saprophytes which are to be found in all of the text-books on systematic bacteriology here also appear, but the customary descriptions of most of them, useless and inadequate as they are for purposes of their identification, have been still further abbreviated by the author, so that it would probably be just as well if he had limited himself to a simple catalogue of their names. In the treatment of the pathogenic and better studied bacteria, similar defects are observed. A conspicuous instance of this is seen in the case of the typhoid organism, the differentiation of which from the bacillus coli communis, is very imperfectly given; some of the most important and trustworthy distinguishing characteristics being altogether omitted. The statement is also made that the typhoid bacillus forms spores and the same is said of the bacillus prodigiosus. This teaching is not now accepted. The account of the relations of various bacteria to pathological conditions of the organs and tissues of the body is also defective. Thus little or no importance is assigned to the part played by the streptococcus in pseudo-membranous inflammation of the throat.

The translation is done in a very readable manner, but here and there an apparent ignorance of the technical English equivalents betrays itself by the use of the terms "islets" for "colonies," "thrust" for "stale" culture, Petrie's "capsules" for Petrie's "dishes" or "plates," "second" for "secondary" infection, "heat" for "temperature." At times also there are indications of a too close adherence to German idiom.

In an appendix by the translator there are *résumés* on the subjects of pathogenic protozoa, cholera vaccination, and action of light on bacteria, together with some additional technique.

The publishers' part has been well done in Messrs. Longmans' well-known style. Some of the illustrations are new and excellent, especially those of gelatine cultures which constitute the most valuable part of the book. Many, however, are taken from the usual stock in common use. Misprints are few.

Diseases of the Skin. By H. RADCLIFFE CROCKER, M.D., (Lond.). Second edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1893.

We are somewhat late in taking notice of the second edition of Dr. Crocker's work for the reason that a hasty examination convinced us that the large amount of new matter that had been added, together with the many alterations, demanded careful reading and study, and it is with great pleasure that we are able to say, that the time has been most profitably spent. As a proof that dermatology is not standing still, we may point to the fact that one of the foremost dermatologists of Great Britain, a writer who has shown much critical discernment in his attitude towards innovations, has felt justified in adding to the list of affections that appeared in the edition of 1888, twelve titles of more important affections of the skin, and thirteen subjects of minor interest. Too much praise cannot be accorded for the careful and systematic manner in which these new subjects have been presented, so that this book will be gladly turned to by the expert, as well as by the general practitioner, when a short, accurate account of the modern contributions to dermatology is demanded. Much weight and dignity is added to the book, by the impartial and scientific spirit shown towards the so-called "schools" of dermatology, and to this much of the book's value must be attributed. The writings of German, French and English speaking people have been impartially and carefully studied, and the result, as we view it, shows that no one school can to-day afford to slight the contributions of the others, without danger of retrograding.

As is natural, we are not always able to agree with the writer, but that is mostly in matters of minor details. We should have liked to see lupus vulgaris included together with scrofuloderma, and verrucous tuberculosis, under the heading of tuberculosis of the skin, and cannot but think that an abundance of material was at hand for an amplification and broader treatment of this whole subject. Dermatitis herpetiformis is treated under the heading hydra herpetiforme. It is better and fairer, we think, to retain the name given it by Duhring, who was the first to call attention to the polymorphism of this disease, until its pathology and etiology have been more clearly defined. It is gratifying to see impetigo contagiosa, ecthyma, furunculus and carbunculus grouped together under diseases due to pus cocci, and these affections are considered tersely in the light of modern pathology.

The paragraphs on pathology are well and critically written and receive added value from the author's experience in histological investigation. The treatment is more concise and emphasizes the writer's own preferences more strongly than is the rule in text-books, and this is also a merit, as a prosaic rehearsal of the different drugs that have at any time been used, is apt to prove an embarrassment rather than a help, to the seeker for aid in therapeutics.

Altogether this second edition of Crocker stands, in our opinion, as the best modern exposition of the subject of dermatology that has been offered by an English-speaking writer.

THE total income of the London Hospital Sunday collections for 1893 was £39,000 as against £41,000 for 1892.

THE BOSTON

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THE THERAPEUTIC ACTION OF BLOOD-SERUM.

At the present time when reference is so often made to the action of blood-serum in producing immunity, another brief *résumé* of the leading facts in connection with it, and what has been established is timely, and will be of aid in understanding the value of future experiments in the same line. Such an analysis has been recently made by Günther, and it is from his article that the chief points in our present review of this subject are taken.¹

The principle rests on the discovery of Behring, that the serum from an animal, which has been rendered artificially immune to a disease, if introduced into the body of another animal, cures him of the disease or renders him immune. Thus the mouse, which is especially susceptible to tetanus, is cured after the outbreak of the disease through the injection of the serum from a horse that has been made artificially immune.

But before sketching the development of the blood-serum therapy, the chief points of the theory of immunity must be touched upon.

It is well-known that one species of animal is very refractory to a certain infectious disease, while another is very susceptible. Among the susceptible individuals there are those which have a greater or less degree of immunity. This rests on unknown factors. These can, however, be acquired, accidentally or otherwise, through exposure to which the individual is subjected. A child which has passed through scarlet fever, is generally immune for the rest of its life, through accidental exposure to the disease. On the other hand, a sheep, very susceptible to anthrax, can acquire immunity against this through an intentional artificial vaccination.

From the time of Jenner to 1880 there was no advance made in the direction of protective inoculation. In that year Pasteur found that if the bacterium of hen cholera was exposed to the air for months its

¹ Carl. Günther: Die Blutserumtherapie. Ihre geschichtliche Entwicklung und ihr gegenwärtiger Stand. Deutsch. Med. Woch., November 16, 1893.

virulence was greatly lessened. If a hen was inoculated with one of these weakened cultures, there was set up only a local transitory affection, and after this had passed off the bird was not susceptible to the virulent form of the disease. The same line was followed in the artificial immunity given to animals through the injection of weakened cultures from anthrax, swine plague, and hog cholera. Various methods to attain this weakening of the virulence were employed. For some the action of oxygen was sufficient, to others chemical substances had to be added. Others had to be grown at a high temperature, while others had to be passed through the body of some other animal. In general, it was found that in order to be weakened, the bacteria must be placed under conditions which are unfavorable to them. As to the real cause of this, little can be said to be known. Many show no change of form or method of growth, while with others a partial degeneration goes hand-in-hand with the decline in virulence.

Several hypotheses have been advanced to explain the action of these less virulent forms and the changes in the body of their recipient.

The first, which may be called the hypothesis of "exhaustion," was supported by Klebs and Pasteur. This supposes that to produce immunity some peculiar nutritive material of the body necessary for the bacteria was used up, so that bacteria that came afterwards could not thrive. This hypothesis is to-day given up. Another which comes nearer the truth is that of "retention," advanced by Chauveau. He believes that for immunity certain products of the bacteria must be kept back in the body, and that these prevent further growth. A third is that of Metschnikoff, grounded on his theory of phagocytosis. He has shown that certain of the body-cells, especially the white corpuscles of the blood and the larger cells of the organs, have the power to seize upon and destroy bacteria. For the act of immunity it is necessary that the phagocytes should first destroy the weaker forms, and in this way they acquired the power to make way with the virulent ones.

A further advance was made by Salmon and Smith in 1887, who discovered that immunity was possible through pure chemical means. Thus the products of a culture of hog cholera, freed from all bacteria, could render pigeons immune to the disease. By this it was surely proved that it is a chemical change of the juices of the body in the act of immunity, which makes the body resistant to the attacks of the virulent bacterial material.

At about the same time Fodor showed that the juices of the normal living body, especially the blood, possessed qualities destructive to bacteria. Blood freshly drawn from a vein was found to kill large numbers of the bacteria placed in it. This property was lost after a few hours, however, and then all kinds of bacteria grow abundantly in it. Serum was found to work in the same way. And Buchner in 1889 announced that the albuminoids in blood-serum freed

from all cells were the possessors of this peculiarity. At the same time it was discovered that all serum did not work in exactly the same way. While these facts might be used in the explanation of immunity, they were found to fail in so many cases, that they had to be set aside, and the conclusions formulated as follows: "The bactericide properties of the blood or its serum cannot be used in general to account for the condition of immunity."

Further studies made in this field by Behring brought out, however, a perfectly regular peculiarity of the blood-serum of an individual rendered artificially immune. He stated this as follows, and it is called Behring's law: "If an individual is rendered artificially immune against a certain infectious disease, then his blood or its serum has acquired the property of transmitting immunity against the same infectious disease to a susceptible individual (no matter of what species) into whose organism it can be brought in sufficient quantities."

The first communication was made in regard to tetanus by Behring and Kitasato in 1890. They were able to render rabbits immune against tetanus. The blood-serum of these rabbits, when introduced into the bodies of mice (extremely susceptible to this disease by nature), protected these little animals completely.

It must be mentioned here that the tetanus bacilli belong to that group of bacteria which are called "toxic" in contradistinction to the "infectious" in the narrowest sense. These last work harmfully by their enormous increase in the body, while, on the other hand, the toxic work by the production of a specific poison. If the tetanus spores enter into a susceptible body they develop in the spot of introduction, and it is here that the active poison of tetanus is produced, which is taken up into the body, and then develops its general deleterious working. The poison can be produced outside of the body in artificial cultures as well. If such a culture is freed from its living bacteria (by filtration), then this filtrate, introduced in proper doses into the body of an animal, causes an outbreak of tetanus just as surely as if the bacteria are used. In the first case it is a tetanus infection. The bacteria penetrate the body and increase. From this there is developed an intoxication, which is absorbed from the poison produced by the developing bacteria. In the second case we have at once, and primarily, an intoxication. The ready-formed tetanus poison penetrates the body as a soluble chemical, and acts thus.

Behring and Kitasato have shown in the above work that the introduction of the serum of animals made immune against tetanus protects the susceptible animals not only against the infection of tetanus, but also against the primary intoxication. These authors have thus added a new point to our knowledge of immunity, and have drawn the following conclusion from their experiments: "The immunity of the experimented animals depends upon the capability of the blood-serum freed from cells to render harmless the toxic substances which the tetanus bacillus produces.

A further proof is that the blood-serum of animals made artificially immune acts in the same way against the tetanus poison in the test-tubes. Further, it was found that animals suffering from tetanus could be cured by the inoculation of the serum of immune animals. This acquired resistance rests, therefore, on the antitoxic peculiarities of the blood-serum."

This epoch-marking discovery in the case of tetanus has been the point of departure for a great number of experiments to see to what extent the blood-serum of artificially immune individuals can be used for the purpose of healing in the infectious diseases. As would be supposed, investigation has been carried on with the blood-serum of individuals immune by nature, and the result has been that in their blood-serum there is no substance which can render other individuals resistant. These substances are therefore never present naturally in an individual, but must be first formed; and this happens only by artificial means. For the understanding of natural immunity, every point fails us at the present time.

Diphtheria was the next disease to tetanus to be investigated (1892). We have to deal here with one which is also produced by toxic bacteria. Here all the general symptoms are to be referred to an intoxication; and the blood-serum of artificially immune individuals was proved to be active through its antitoxic properties. This process of immunization against tetanus and diphtheria can be regarded, from the nature of those diseases, in the light of a seizure of the virus (*Giftfestigung*). Ehrlich, too, has shown that Behring's law holds also for the seizure of other poisons than those produced by bacteria. He was able to render mice immune against ricin (an extremely poisonous albumen obtained from the seeds of the ricinus communis), as well as against abrim (the toxic albumen from the jequirity beans), by feeding them with gradually increasing doses of these poisons.

The serum of these animals was capable of transferring its property of seizing these poisons to healthy animals. It also rendered the poison harmless when they were brought together in the reagent glass.

In all infectious diseases Behring's law has turned out to be true, even where one cannot speak of the seizure of the virus. For example, in all cases of septicæmia which have been investigated in this regard. Even in those where as yet the poison has not been isolated—for example, rabies—it holds good that the blood-serum of artificially immune individuals can transmit immunity to normal individuals.

The above investigations have also thrown light upon the spontaneous healing of infectious diseases. This appears, in general, to come about when there have been formed in the body, especially in the blood, substances which paralyze the harmful agents. If the disease has been overcome, these "anti-agents" in the blood are found afterwards. In men who have lived through a pneumonia, typhus, cholera or diphtheria, the blood-serum has been found to act in rendering animals immune.

It has been stated above that the protective serum can also heal diseases that have already broken out (therapeutic action of blood-serum). But it has been generally found that very much more serum is necessary for healing than to produce immunity; and still more is needed the further advanced the disease. And, furthermore, the necessary amount stands in direct relation to the body-weight of the individual.

It will at once be realized that there are practical difficulties in the way of obtaining a large quantity of very active serum for treatment in the care of man. In the two diseases in which it has been tried, diphtheria and tetanus, the sheep and horse are the animals from which the immunizing serum has been obtained. The results from this treatment, however, will have to be subjected to the severest scrutiny before all that is claimed for them can be allowed. Certainly the work is a great contribution to our understanding of these obscure processes, and while that can at once be accepted, the practical outcome must still be regarded as under judgment.

Of the chemical nature of the active substance in the serum there is little known. In the case of the anti-tetanus, it has been found to be very resistant against physical, chemical and atmospheric influences. It passes through the dialyser, and by this the characteristic reactions for albumens are lost.

It has been shown by Ehrlich that the immunizing substance of the blood can pass into the milk, and through nursing immunity can be obtained. At the same time, it has been shown that immunity (through seizure of the poison) can be transmitted through the mother, but not the father. In the inheritance of artificial immunity two factors come into play: first, the supply of the foetus with immunizing substances from the maternal blood, and, second, the continued accretion to this by the offspring through the milk.

In regard to the length of time and the persistence of the artificial immunity, the two ways in which it can be acquired are to be kept sharply separated. If the immunization is "active"—that is, if the body itself helps prepare the substance which overcomes the disease—then the resulting immunity is relatively strong, and exists a long time. If, on the other hand, it is "passive"—that is, if immunity is given to the organism by the introduction of serum, blood or milk in which the agent is already prepared, then the immunity is a relatively short one, probably not extending over more than a few weeks.

MEDICAL NOTES.

THE CONGRESS FOR HYGIENE AND DEMOGRAPHY.—At the eighth International Congress for Hygiene and Demography, to be held this year at Budapest, an entirely new section is to be organized for the study of the hygiene and etiology of diseases of the tropics. Dysentery, malaria, yellow fever, elephantiasis, beriberi, the influence of tropical climates upon Europeans, tropical affections of the liver, and the effects of the

use of alcohol in warm countries, are some of the especial topics for discussion.

FIRE IN A LONDON HOSPITAL.—A fire occurred in the Royal Free Hospital in London, last week, which was extinguished with some difficulty. The patients in the wards were all removed safely, and no serious damage was done.

SMALL-POX AT NASHVILLE, TENN.—Six cases of small-pox were reported at Nashville, Tenn., January 8th, from four different sections of the city, all of the patients being negroes.

BOSTON AND NEW ENGLAND.

BOSTON WATER CONSUMPTION.—The daily average consumption of water in December last was as follows; Sudbury and Cochituate system, 47,807,800 gallons as against 43,766,400 in December, 1892; Mystic, 11,620,800 as against 10,475,700 for the corresponding month of 1892; total, 59,428,600, an increase of 5,188,500 gallons over December, 1892. The flow of the Sudbury and Cochituate is now about 10,000,000 gallons a day more than its consumption.

BEQUESTS.—The Carney Hospital and the Free Home for Consumptives of Boston, have each received a bequest of five hundred dollars by the will of Mr. Dennis Cawley.

FREE VACCINATION IN BOSTON.—The free vaccination stations were closed last Saturday evening. During the two weeks in which they were open over forty thousand persons were vaccinated. During the present week a physician is to be sent to each public school to vaccinate all children who are in need of it, though the vaccination is not to be compulsory.

SMALL-POX IN BOSTON.—There have been five new cases of small-pox in Boston in the week ending at noon January 10th. There have been no deaths.

SMALL-POX AT LOWELL.—Several new cases of small-pox have occurred at Lowell, Mass., during the week and there are now seven patients at the small-pox hospital, one of whom is not expected to live. In spite of these cases much opposition is being shown to vaccination in both Lowell and Lawrence, chiefly by the German population.

SMALL-POX AT WORCESTER.—A case of small-pox occurred at Worcester last week, in an employé at a tannery. His boarding-house has been put under close surveillance.

INFLUENZA AT PORTSMOUTH, N. H.—The influenza is prevalent to a serious extent in Portsmouth, N. H. Over seven hundred persons are now ill, and there have been many deaths during the last few days, directly due to the gripe.

"VARIOLENA."—Several cases have come to notice this week, in which patients have been given some small white, sweet-tasting pills to take every two hours or so for the purpose of "effecting vaccination without the discomfort of scarifying and causing a sore arm." In, at least, one case, the patient had been un-

successfully inoculated, and was told, "Well, no matter, the pills will do just as well."

NEW YORK.

ACADEMY OF MEDICINE ELECTIONS.—At the annual meeting of the New York Academy of Medicine, held January 4th, the following officers were elected: Vice-President, Dr. Joseph D. Bryant; Member of the Board of Trustees, Dr. Abraham Jacobi; Treasurer of the Board of Trustees, Dr. Wm. F. Cushman; Member of the Committee on Library, Dr. W. Gilman Thompson; Member of the Committee on Admissions, Dr. John S. Warren.

DEATH OF MRS. LEWIS A. SAYRE.—Much sympathy is felt in the profession and the community at large for the venerable Dr. Lewis A. Sayre, on account of the loss of his estimable wife, who died suddenly on January 5th, in the seventy-second year of her age. Mrs. Sayre was the daughter of the late Charles Henry Hall, and came of a distinguished old New York family. Up to a day or two of her death, she enjoyed good health.

THE WAY SMALL-POX IS SPREAD.—The way in which small-pox is often spread is strikingly illustrated by the discovery of three cases in a tenement-house in Harlem. On December 20th, a man by the name of Murphy was found with the disease in the annexed district beyond the Harlem River, and sent to the hospital for contagious diseases on North Brother Island. The house was promptly fumigated, and the inmates vaccinated, but the wife of the patient managed to escape the vigilance of the authorities, and disappeared with her child. On January 4th, the officers of the Bureau of Contagious Diseases found the child and two Italian children suffering from small-pox in a house on East 111th Street. In the meanwhile, the Board of Health is carrying on the work of general vaccination vigorously, and the extra corps of vaccinators, whose term expired with the old year, has been reappointed.

APPROPRIATION FOR THE BOARD OF HEALTH.—The \$425,080 mentioned in last week's JOURNAL as having been appropriated for the expenses of the Department of Charities and Correction for 1894, should have been set down to the Board of Health.

TUBERCULOSIS AMONG LEVI P. MORTON'S CATTLE.—Seventeen pure Guernsey cattle owned by ex-Vice-President Levi P. Morton, at his country place at Rhinecliff on the Hudson, have been found to be suffering with tuberculosis, and the State Board of Health, acting on the report of Dr. John Faust, of Poughkeepsie, have ordered that they be killed. Dr. Faust is of the opinion that the tubercle bacilli have only recently invaded the systems of the cattle from the fact that the animals are to all outward appearance entirely free from disease, the presence of tuberculosis having been revealed only by the Koch test of the hypodermic injection of tuberculous matter. Among the infected cattle are a number which were exhibited and won prizes at the Chicago World's Fair, and it is

probable that the disease was contracted there. It is stated that over one hundred head of cattle exhibited at the Fair from the State of New York, have been found, by the Koch test, to be suffering from tuberculosis, and have been killed.

Miscellaneous.

INAUGURAL ADDRESS OF THE GOVERNOR OF MASSACHUSETTS.

In his inaugural address, Governor Greenhalge recommended the passage of a medical practice act by the State Legislature. He said:

"I ask you also to consider the expediency of requiring that practitioners of medicine be registered, in somewhat the same manner as pharmacists are now registered.

"In every State of the Union, except five, such a system of registration has been established, and it cannot fail to protect the public, and at the same time help to maintain a high standard among medical practitioners."

Other matters of medical interest of which he spoke were the various State boards and their work.

"The work of the State Board of Lunacy and Charity is one of vast scope, comprehending the supervision and visitation of the public and private insane hospitals and asylums of the State, State almshouse and State farm, and three State schools, and the State and town almshouses containing insane inmates; the care of insane patients boarded in families, with the supervision of juvenile offenders, and the administration generally of the laws concerning the support of State paupers by cities and towns, together with many other duties of kindred nature.

"The importance to the community of this great work of charity cannot be overestimated. It is in such lines of work that Massachusetts has won her high reputation among the States of the Union and throughout the civilized world.

"The care and improvement of the unfortunate coming within the jurisdiction of this Board is no insignificant standard by which to mark and measure the degree of civilization in this community.

"The work assigned to the Board appears to have been faithfully and efficiently performed in all its departments."

After calling attention to the need of new buildings to prevent overcrowding, and the necessity of separating the different classes of inmates, the innocent from the criminal, he said:

"Various suggestions will be made by this Board in their forthcoming report in regard to amending the statutes relating to the form of mittimus, the commitment laws, the record books in the State hospitals, and on various other points which I regard as practical and beneficial. The propriety of furnishing to the insane some light and interesting employment merits also your consideration.

"The Board of Health is performing its difficult and responsible duties in a most effective and satisfactory way. The Board exercises a strong and salutary influence over local Boards of Health. The year just closed has been marked by faithful and intelligent labor, and by excellent results, as the report of the Board will plainly demonstrate.

"I commend this report, with its suggestions and recommendations, to which I find no occasion to add anything, to your careful examination."

THE DUTIES OF ARMY MEDICAL OFFICERS.

At the opening session of the newly established Army Medical School, Colonel Alden, President of the Faculty, spoke of the important duties of an army medical officer. He should be a sanitarian first and a practitioner next. His primary duty is to prevent disease and preserve the efficiency of the command. The questions of practical sanitation which he must deal with at every turn he has had but little experience in. Questions of soil, buildings and ventilation, of drainage, sewerage and disposal of garbage, the wholesomeness of water-supplies and animal foods are but a few instances of the many points bearing on the preservation of the health of the military comitia under his sanitary care, on which the ordinary medical graduate needs further instruction to fit him for military service.

"The actual duties of the medical officer are divisible into three branches. First, he is to see that none but able-bodied and effective men fit to perform the duties and endure the hardships incident to military life are admitted to the service. He must therefore critically examine the voluntary recruit or person about to receive a commission. Second, he must carefully watch over the health of the command to which he is attached in order that no causes that may mar its efficiency can gain headway. He knows that the mere aggregation of men leads to disease and that the experience of all campaigns shows that disease kills more than does the enemy. He must be ever ready to draw attention to unsanitary conditions. Third, he must keep himself always ready to relieve the sick and wounded in garrison and in the field; to endeavor to make them effective again at the earliest possible moment, or extend such measures of relief as may be possible if restoration to duty is impracticable."

DRUNKENNESS IN WASPS.

SOME of our readers may have seen a flock of crows fed on corn or meal previously saturated with whiskey, and grieved at the wickedness of man in extending the vices of civilization to the innocent animal world. They may be relieved, or perhaps even more grieved, to learn that the desire for strong drink is natural in other orders than man. Mr. Lawson Tait, in an address on the use of alcohol, relates the natural fondness of wasps for intoxication. He says:

"I have watched wasps with great interest, and have noticed the avidity with which they attack certain fruit when fully ripe, rotting, in fact, and I have also noticed some of the peculiar results of their doing so. The sugar in some fruits which are most attacked by wasps has a tendency to pass into a kind or kinds of alcohol in the ordinary process of rotting, a fact which is easily ascertained by the use of a still not large enough to attract the attention of the excise authorities. On such fruits, particularly grapes and certain plums, you will see wasps pushing and fighting in numbers much larger than can be accommodated; and you will see them get very drunk, crawl away in a semi-somnolent condition, and repose in the grass for

some time, till they get over the "bout," and then they will go at it again. It is while they are thus affected that they do their worst in stinging, both in the virulent nature of the stroke and the utterly unprovoked assaults of which they are guilty."

WORK AS A THERAPEUTIC AGENT.

A CORRESPONDENT has sent to the *Spectator* the following short letter from Sir Andrew Clark :

DEAR — : There are two things about all patients which help us to discover their maladies : what is found by the physician and what is felt by the patient. What is felt helps us very little ; what is found, for the most part settles our judgment. What is felt by Mr. — amounts to a great deal. Various disturbances of digestion, weakness, inaptitude for work, recurring faintnesses, *malaise*, and the feeling of getting worse and worse. What I found amounts to very little. . . . Every organ that I can reach is free from obvious structural disease ; and as the patient has suffered for years in this way and nothing has come of it, it is reasonable to say that there is no structural disease. Mr. —, therefore, is ailing, and perhaps suffering, but not in the ordinary sense ill ; furthermore, I think that he is introspective, morbidly nervous, and occupied with himself. He cannot at present be made well ; but he may reach his best by a simple regular diet, by self-effacement (dying to live), by light, regular, daily occupation, by the resolution to give a deaf ear to his trying sensations, and by a determined fighting and struggling to lose himself in outward things. . . . To do nothing would be to go backwards and downwards. True, he may suffer if he works ; nevertheless, it is best to work. Hundreds suffer to work. I have always suffered to work, but work keeps me where I am ; I have to wrestle with it, but thus my antagonist becomes my best helper.

Yours sincerely,
ANDREW CLARK.

VACCINATION IN ANCIENT TIMES.

A CORRESPONDENT of the *American Practitioner and News* writes that at a recent meeting of the Epidemiological Society of London Dr. Pringle called attention to the following passage, he had found in an ancient Hindu work, which he thought proved that vaccination was known and practised in India centuries before the birth of Jenner :

"The small-pox produced from the udder of the cow will be of the same mild nature as the original disease, the pock shall be of good color, filled with clear liquid, and surrounded by a circle of red. There will only be a slight fever of one, two, or three days, but no fear need be entertained of small-pox so long as life endures."

A REMINISCENCE OF THE NICARAGUAN FILIBUSTERS.

In a recent number of the *Journal of the American Medical Association* Dr. L. C. Lane describes the condition in which he found the American filibusters who had been taken prisoners by the Costa Ricans in 1858. He was at the time assistant surgeon on the U. S. Sloop *Decatur*, which was moving from port to port for the purpose of aiding or protecting Americans who might be found in distress.

On arriving at Punta Arenas, the Pacific port of Costa Rica, they found a body of American prisoners, most of them under thirty years of age, half-naked, and suffering from starvation. Nearly all were troubled

with ulcers of peculiar type, seated chiefly on the arms and legs and due to wounds received from thorns or insects. These ulcers consisted of half-formed tissue which, in the exuberance of its growth rose two or three lines above the adjacent surface. They were of a pale-yellow color, and so non-vascular that when touched they did not bleed. This pseudo-formation differed widely from any form of granulative tissue, and in appearance it resembled a thick emulsion, rather than an organized animal tissue. In fact, it was a new type of structure, so low in organization that it was the analogue of a fungoid plant, and was no more sentient than the latter. This fungoid neoplasm had arisen in the human body that was saturated with malarial poison, half-starved and living on a non-nitrogenous food. Under the simple treatment of cleanliness and feeding on man-of-war's rations the ulcers rapidly healed.

THE LITHOTRIPTIST.

In a recent address on the progress of surgery during the present century, Professor Clark, of Glasgow, gives the following interesting bit of medical history. Speaking of the great advance in operations on the urinary bladder, he says :

"I have in my possession an old English dictionary, the author of which was James Knowles, the father of Sheridan Knowles, the playwright and poet. In that book, on the usual blank page behind the title, is this note :

"N. B. — Look for a New Word after the last word in P, and a further explanation in an added Page at the end of the Preface."

"The new word thus indicated is *Lithotriptist*, and the meaning is 'A professor and operator in the recently discovered art of lithotripsy ; which consists in breaking, triturating, and pulverizing the stone in the bladder, and removing all the particles of it. The word is here, with thanks to God, a sense of duty to the public, and a deep feeling of gratitude to the Professor Baron Heurteloup, associated with his name ; he having on Saturday the fourth of April, in presence of several surgeons and physicians, in about five minutes operated upon the author, whose age is seventy-three, without giving him much uneasiness ; and by his consummate skill, not only relieved him from a state of suffering, which he had endured for twelve months, but preserved his life, which, in all human probability, he must have lost under the operation of lithotomy.' This book is dated 1838, and we have thus a definite time from which to date the commencement of the operation for crushing stone."

PHARMACY, THERAPEUTICS AND CREDULITY.

PROFESSOR CASH opened the Edinburgh session of the Pharmaceutical Society with an address¹ on some of the present aspects of therapeutics. In tracing the relations that connected the scientific chemist with the therapist, he said it was the part of the chemist to produce a pure substance, so that the pharmacologist might be able to assign to it its definite and proper value. The product once obtained, the question arose, Why do we use this drug ? The answer involved an

¹ British Medical Journal.

answer to the pharmacologist's questions, How is it to be used? which gave scope to the dexterity of the pharmacist to prepare it in many forms for the exigencies of practice; and When should it be used? To this third query the therapist gave the final reply. He it was who, bearing in mind and relying upon the labors of the men who answered the questions, Why? How? applied the accumulated knowledge to the cure of disease. It was not rash to forecast that the advent of new remedies would be through the channels of close research and study, and that the scientific practitioner of the future would refuse to make use of anything which reaches his hands by less certain ways. Pure empiricism was decaying, although its decline was likely to be slow. Credulity was losing its hold on all, and whether the cry was a new cancer cure by green or yellow electricity or a great Chinese cure, the rush of the credulous amongst those who had been educated to know the left hand from the right in medical matters was but a trifling one. Still, it was not likely that this generation nor the next would fail to contribute its numbers to those who chased the will-o'-the-wisp into medical bogs. But credulity might be shaken by firm example, and he hoped much from the confidence that could be justly obtained from what had been weighed in the balance and not found wanting.

THERAPEUTIC NOTES.

LOCAL ANÆSTHESIA.—A mixture of chloroform (ten parts) ether (fifteen parts) and menthol (one part), used as a spray, is recommended as an excellent and prompt means for obtaining local anæsthesia lasting for about five minutes.

CORYZA.—Hayem¹ gives the following prescription for the relief of acute coryza:

R	Acid. carbolic	}			aa	3 iiss
	Aque ammoniac	}				
	Alcohol					3 v
	Aque destil.					3 i M.

Sig. Inhale from several drops upon a piece of bibulous paper.

LOTION FOR PRURITUS VULVÆ.²

R	Hydrargyri perchloride	.	.	.	.	gr. i
	Alumina	.	.	.	.	gr. xx
	Pulv. amyli	.	.	.	.	3 iiss
	Aque menthæ pip. q. s. ad	.	.	.	.	3 vi

M. et fl. lotio.

Sig. Apply externally to the affected parts.

TO PREVENT COCAINE INTOXICATION.—Professor Parker, in the *British Medical Journal*, states that he has discovered that the unpleasant or even poisonous symptoms which occasionally follow the application of strong solutions of cocaine in the nasal and buccal cavities, may be entirely prevented by combining the drug with resorcin.

AN INHALATION FOR PULMONARY TUBERCULOSIS.—Dr. Carasso Michele, Director of the Military Hospital at Genoa, has used since 1888, in the treatment of pulmonary tuberculosis, constant inhalations of oil of peppermint. He combines the inhalation with the internal administration of an alcoholic solution of creosote, glycerine and chloroform, to which is added oleum menthæ piperitæ, 1:100. His results are reported as remarkable. Not only were incipient cases cured, but advanced cases also, some thirty-nine in all, with cavity-formation and abundant bacilli in the

sputum. All the cases treated were of pulmonary disease only, without tubercular affection elsewhere.

INHALANT FOR ACUTE LARYNGITIS.¹—Casselberry recommends the following combination as a soothing spray in acute inflammation of the larynx and trachea:

R	Ol. pint canadensis	.	.	.	.	m. v
	Ol. gaultheriæ	.	.	.	.	m. ii
	Ol. eucalypti	.	.	.	.	m. ii
	Menthol	.	.	.	.	gr. i
	"Benzoinol"	.	.	.	.	3 ii
	"Vaseline oil" q. s. ad.	.	.	.	.	3 i M.

Sig. To be used with a double-bulb atomizer.

WHOOPING-COUGH.²—Bergeon reports that for six years he has successfully treated his cases of whooping-cough by rectal injection of carbonic acid gas. Immediately after the paroxysm one or two litres of the gas are injected into the rectum provided that three hours have elapsed after the last meal. The injections are repeated every four hours if necessary. They cause no gastric or intestinal disturbance and the child can eat immediately afterwards. Under this treatment his cases usually yield at the end of a week. Unruh³ directs his treatment chiefly to the initial bronchial catarrh, and advises the insufflation of a grain and a half of powdered quinine once a day. In young children where this cannot be accomplished, he uses turpentine inhalations by means of face masks. Internally, he gives every three hours a teaspoonful of a three-per-cent solution of antipyrin, which is the only drug he has found of value. Pizzocaro⁴ calls attention once more to the favorable effect of vaccination upon whooping-cough. In several very severe cases, with twenty or thirty coughing spells a day, which had been unrelieved by the usual remedies, inoculation with animal lymph resulted in a complete cure in from eleven to eighteen days.

Correspondence.

"HIGHER MEDICAL EDUCATION."

CHICAGO, January 10, 1894.

MR. EDITOR:—The following notice will be of interest to many of your readers. Hoping that its publication may induce other colleges to enter upon the same policy,

I am yours truly,

E. FLETCHER INGALS, Registrar.

"In pursuance of the policy recently announced in the resolution to be presented to the American Medical College Association, the Trustees and Faculty of Rush Medical College have decided to require four years' attendance at college from students who begin the study of medicine this year with a view to graduation in 1898; however, those who have already studied medicine one year or more with a preceptor, so that the four years of study, already required, will be completed before July, 1897, may graduate after three courses of lectures, as heretofore. To encourage proper preliminary study, graduates in Arts and Sciences from high-grade colleges, and graduates in Pharmacy and Dentistry from colleges requiring a proper amount of study and two full courses of lectures will, until further notice, be allowed to graduate after an attendance on only three courses of lectures."

[We think announcements of this sort would be more useful if the length of the school year were stated, as well as the facilities for taking a four years' course in three years.—ED.]

¹ New York Medical Journal, October 24, 1893.

² Lyon Medical, No. 26, 1893.

³ Jahrbuch für Kinderheilkunde, vol. xxxvi, 1893.


⁴ Reforma med., No. 56, 1893.

¹ Rev. de Laryngol. d'Otol. et de Rhinol., 1893, No. 18.

² Practitioner.

METEOROLOGICAL RECORD,

For the week ending December 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..24	30.17	48	55	40	70	78	74	W.	S.W.	8	13	O	O.	
M..25	29.47	52	57	46	79	72	76	W.	S.W.	12	19	F.	O.	
T..26	30.09	24	30	19	64	47	56	N.W.	N.W.	19	19	F.	O.	
W..27	30.06	28	37	18	64	57	60	W.	W.	12	10	F.	O.	
T..28	29.73	31	42	26	60	77	68	S.W.	S.W.	14	12	F.	O.	
F..29	29.86	44	49	40	78	68	73	S.W.	W.	9	12	O.	O.	
S..30	30.08	28	33	22	69	97	83	N.	N.	12	15	O.	N.	.14
	29.95	43	30				70							.10

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 30, 1893.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,891,306	824	295	14.52	22.14	1.80	.48	8.64	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,662	—	—	—	—	—	—	—	
Brooklyn	978,394	370	121	8.91	23.78	.27	1.35	4.56	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	264	74	10.92	29.64	.39	.78	5.07	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	119	24	12.90	17.20	.46	5.16	4.30	
Cincinnati	305,000	130	36	14.63	20.79	4.62	3.85	3.85	
Cleveland	290,000	71	27	12.69	22.65	1.41	—	11.28	
Pittsburg	263,709	102	40	9.0	20.58	—	.98	2.94	
Milwaukee	250,000	75	31	18.62	18.62	3.99	2.64	—	
Nashville	87,754	46	10	2.17	10.65	—	—	—	
Charleston	65,165	40	12	2.80	15.00	—	—	—	
Portland	40,000	24	0	—	24.96	—	—	—	
Worcester	96,217	39	10	5.12	30.72	—	—	2.55	
Fall River	87,411	31	13	9.69	32.30	9.69	—	—	
Lowell	67,191	54	16	14.80	20.35	7.40	3.70	—	
Cambridge	77,100	40	12	12.50	27.50	2.50	—	2.50	
Lynn	62,666	19	7	—	5.26	—	—	—	
Springfield	48,684	24	7	4.18	24.96	—	—	4.16	
Lawrence	48,365	—	—	—	—	—	—	—	
New Bedford	45,886	25	8	4.00	20.00	—	—	4.00	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,238	12	3	—	58.31	—	—	—	
Brookton	32,140	9	1	—	88.88	—	—	—	
Haverhill	31,396	7	1	—	14.28	—	—	—	
Chelsea	30,284	15	3	—	13.33	—	—	—	
Malden	29,394	13	3	—	15.38	—	—	—	
Newton	27,656	—	—	—	—	—	—	—	
Fitchburg	27,146	7	3	—	14.28	—	—	—	
Taunton	26,972	12	2	8.33	—	—	—	—	
Gloucester	26,688	8	1	—	—	—	—	—	
Waltham	22,058	4	0	—	75.00	—	—	—	
Quincy	19,612	4	2	—	—	—	—	—	
Pittsfield	18,402	1	1	—	—	—	—	—	
Everett	17,545	6	1	—	16.66	—	—	—	
Northampton	16,331	6	2	—	22.22	—	—	—	
Newburyport	14,073	12	2	—	—	—	—	—	
Amesbury	10,920	6	1	—	—	—	—	—	

Deaths reported 2,446: under five years of age 774; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 306, acute lung diseases 552, consumption 266, diphtheria and croup 131, diarrhoeal diseases 33, typhoid fever 28, scarlet fever 24, whooping-cough 24, measles 22, cerebro-spinal meningitis 6, small-pox and erysipelas 6 each.

From scarlet fever New York 7, Boston 6, Brooklyn and Pittsburg 3 each, Cambridge and Somerville 2 each, Milwaukee 1. From whooping-cough New York 6, Brooklyn 4, Boston, Cincinnati and Pittsburg 3 each, Washington, Charleston, Worcester, Somerville and Taunton 1 each. From measles New York 12, Milwaukee 8, Brooklyn and Cambridge 1 each. From cerebro-spinal meningitis New York and Lowell 2 each, Brooklyn and Washington 1 each. From erysipelas New York, Boston and Washington 1 each. From small-pox New York 2, Boston 1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 6, 1894.

FRANK C. COOK, Washington, D. C., commissioned an assistant surgeon in the Navy, January 4, 1894.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, January 17th, at 8 o'clock.

Papers: Dr. G. G. Sears: "Pregnancy and Heart Disease." Dr. R. C. Cabot: "Diagnostic and Prognostic Significance of Leucocytosis."

F. C. SHATTUCK, M.D., Chairman.
HENRY JACKSON, M.D., Secretary.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, January 17th, at 8 o'clock, by Assistant Professor Ernst. Subject, "Advances in Bacteriology." Physicians are cordially invited.

RECENT DEATHS.

OLIVER AUGUSTUS WILLARD, M.D., M.M.S.S., died in Lowell, Mass., January 7th, aged thirty-eight years.

FRANCIS MINOT WELD, M.D., died in Jamaica Plain, December 31st, aged forty-three years. He graduated from Harvard College in the class of 1860, and while a student in the Medical School, received an appointment as medical cadet and was soon commissioned as assistant surgeon at the Naval Hospital in Chelsea. During the year 1863 he served on the ironclad monitor *Nantucket* in blockade service at Charleston and Savannah, and later in the year served on the frigate *Wabash*. He was relieved from naval duty in January, 1864, and completed his course at the Harvard Medical School. In April, 1864, he entered the army as a surgeon and was with Grant in the Campaign from the Wilderness to Petersburg, and with the Army of the James before Richmond, and joined Sherman at Raleigh. During his service he was at different times brigade and division surgeon, and in charge of various field and post hospitals. After the war, October 1, 1865, he began the practice of his profession in Jamaica Plain, but moved the next year to New York City, where he practised until 1887. He was medical superintendent of the New York Hospital in 1876-7. He was for twelve years a member of the board of overseers of Harvard University.

HAMPTON E. HILL, M.D., died at Saco, Me., January 9th, aged forty-three years. He was at one time demonstrator of anatomy in the Bowdoin Medical School and a member of the medical staff at the Soldiers' Home at Togus.

LUCIUS FLAGG BILLINGS, M.D., M.M.S.S., died in Barre, Mass., November 26, 1893, aged seventy-one years.

PIERRE J. VAN BENDEN, M.D., D.Sc., LL.D., Professor in the Faculty of Sciences at Louvain, died at Louvain, January 9th, aged eighty-four years. His life was spent in scientific research in many departments of knowledge, anatomy, zoology, physiology and ethnology. He was a member of the Academy of Science of Belgium; a foreign member of the Royal Society of London; a member of the Institute of France.

BOOKS AND PAMPHLETS RECEIVED.

Thirty-eighth Annual Report of the Trustees of the Northampton Lunatic Hospital for the Year ending September 30, 1893.

The Healing of Rodent Cancer by Electricity. By J. Inglis-Parsons, M.D., M.R.C.S., M.R.C.P. (Lond.). London: John Bale & Sons. 1893.

Outline of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D., Demonstrator of Physical Diagnosis in Rush Medical College; Attending Physician to the Central Free and Bethesda Free Dispensaries, Department of Rhinology, Laryngology and Diseases of the Chest. Chicago: The W. T. Keener Co. 1894.

A Text-book of the Physiological Chemistry of the Animal Body, Including an Account of the Chemical Changes Occurring in Disease. By Arthur Gamgee, M.D., F.R.S., Emeritus Professor of Physiology in the Owens College, Victoria University, Manchester; Lately Fullerian Professor of Physiology in the Royal Institution of Great Britain. With two chromolithographic charts by Spillion and Wilkinson. Vol. II. The Physiological Chemistry of Digestion. London and New York: Macmillan & Co. 1893.

Original Articles.

ON THE VALUE OF EXAMINATION OF THE BLOOD OF THE INSANE.¹

BY J. A. HOUSTON, M.D., NORTHAMPTON, MASS.,
Assistant Physician, Northampton Lunatic Hospital.

It is a truism that the mind requires, for the proper maintenance of its operations, a sound body.

You are all cognizant of the influences which mind and body have upon each other. Their interdependence is noted every day by the hospital physician; he sees it in many cases on admission, it having been estimated that in 55 per cent. of admission to hospitals for the insane the bodily health is considerably below normal; he notices it in convalescents by the advancement together of mind and body toward a condition of soundness, the weight-charts of recoveries showing almost universally an upward curve; he realizes it in those cases that retrograde till death seems to result solely from the physical exhaustion induced by the mental state; and finally he admits it by his method of treatment, which is largely directed toward the restoration of the body to its normal tone.

How great a factor impaired vitality is in the etiology of mental troubles is not easy to determine, because in so many of our cases it is a result rather than a cause.

Of 1,678 admissions to the State hospitals of this commonwealth last year, the assigned cause of insanity was ill-health and privation in 74 cases, or 4.5 per cent., while in seven per cent. additional cases the assigned causes were such exhaustive diseases as influenza, phthisis, typhoid fever, pneumonia, rheumatism, neurasthenia, etc.

Inasmuch as numerous agents and conditions which influence the quantity of blood supplied to the higher nervous centres, thus increasing or diminishing the amount of nutriment, do thereby cause disturbances of the normal action of those centres, it has been inferred with reason that marked variation in the quality of the blood-supply may similarly produce impaired action of the nervous centres.

To determine what connection, if any, exists between certain mental states and pathological conditions of the blood, Dr. S. Rutherford Macphail several years ago made an extensive series of examinations of the blood of the insane with special reference to its richness in corpuscular elements and in hæmoglobin.

The results of his investigations, which are published in the *Journal of Mental Sciences* (Vol. XXXII), appear to be quite conclusive that poverty of the blood is in many cases a predisposing cause of insanity. Later observers confirm the results obtained by him.

An account of my experience in the examination of the blood of the insane within a few months past may be of interest to any who have not personally made such examinations. For estimating the number of corpuscles I made use of the Thoma-Zeiss instrument, which is probably the best adapted to the purpose of those made. For estimating the percentage of hæmoglobin several methods are in use. Probably Fleischl's hæmometer is the most accurate instrument for practical use. I made use of Gower's method, which is simple, and which, I am informed by Professor Henry, of Philadelphia, an authority on the subject, is suffi-

ciently accurate for clinical use — probably within two or three per cent.

In my examination of men in sound health, I found that Gower's standard tint for comparison is apparently too high, none of the examinations showing more than 90 per cent. of hæmoglobin. Learning that other observers had the same experience, I made a new standard, as follows: taking blood from 11 men, as many as I could conveniently obtain at the time, whose blood registered 90 per cent. by Gower's standard, I diluted each 100 times with distilled water and mixed the dilutions. Taking the tint thus obtained for normal, I copied it with glycerine jelly tinted with picocarmine, which makes a stable tint. I corresponded with Professor Henry about the matter, who replied: "I have found the standard of Gower's Hæmoglobinometer too high, and am accustomed to regard as normal a blood which contains a normal number of red corpuscles, and of which the color corresponds to 90 or even 85 of Gower's or Fleischl's test. . . . Your method of obtaining a color standard is the only correct one."

Stimulated by the results obtained by others, I had hopes of obtaining satisfactory results in my own observations. But when, after a few trials, some of the enumerations showed an abnormal plethora in apparently anæmic individuals, and other enumerations indicated an immediate need of tonics in those robust to outward appearance and enjoying the blessings of health; and when finally the same individual would be found rich and poor in the formed elements of the blood, all in the same day, I may add that my enthusiasm was somewhat lessened and my faith was tinged with doubt.

My further experience and further knowledge of the experience of others convince me that conclusions based upon single observations are quite unreliable.

There are many opportunities for making an inaccurate estimation of the number of corpuscles. The chief source of error, in my opinion, lies in the qualities of temperament peculiar to the observer — in the method of conducting the observation from the puncturing of the skin for the blood to the final count. As for the errors of manipulation, I will mention those of importance. Pressure on the finger to induce a flow of blood from the puncture is said to disturb the relative proportion of corpuscles and serum. I do not know as to this; it is easily remedied.

Of more importance is the mixing of the blood and diluent. It should be done thoroughly to ensure an equal distribution of blood-corpuscles through the mixture. I believe this can be done with more certainty in the bulb of the pipette than in an open jar with stirring rod, as some observers do. The objection to mixing in the bulb is the difficulty with which the bulb is afterward cleansed and dried. I think accuracy will outweigh inconvenience in the method. I would recommend having the solution for diluting the blood at blood-heat, and would then rotate the pipette from two to three minutes. In my practice I expel nearly or quite half of the mixture, that I may get a drop from as near the middle as possible. I would not recommend the common practice of counting a second drop from the same preparation, because I fear some undue proportion of liquid or of hæmocytes may adhere to the sides of the bulb during the second mixing, which is rendered necessary by the settling of the corpuscles in the bulb while the first count was in progress.

¹ Read before the New England Psychological Society, September, 1893.

The size of the drop placed upon the cell for counting is supposed to influence the result, though, theoretically, from the nature of the cell's construction, the variation should be slight.

And finally, the care with which the corpuscles on the squares are counted has much to do with the result, since each corpuscle counted, in a dilution of 1-200, represents 3,125 corpuscles in the total estimated.

Considering these facts, it is well-nigh impossible for the observers to obtain the same results from the same individual, and even from the same drop of blood.

Dr. Daland, of Philadelphia, has recently sent me a paper embodying the results of examinations of blood by himself. From a study of eight cases counted by himself and Dr. Sadler conjointly, he reaches conclusions which I will briefly notice. First, he states that when the same squares are counted by two competent observers with the minutest care, a difference between the two counts of between 50,000 and 150,000 corpuscles may be expected, 5,000,000 being the normal average. In the case cited by him where he and Dr. Sadler differed by 150,000 in a total of 4,150,000, he must have counted in 64 squares 320 corpuscles, and Dr. Sadler's count must have been 332 corpuscles, a difference of three corpuscles per field of 16 squares, which seems to me to be an error three times too great. I think 50,000 corpuscles should represent the highest limit of difference.

I would state here that I invariably count 256 squares, and feel more confident of results, though it requires more time.

To ascertain the liability of error when two observers count the same squares, my associate, Dr. Holmes, and myself counted eight consecutive cases with care, though not with minutest care. The greatest difference between our counts was 34,000 corpuscles (considerably less than one per cent.), while the average of difference was less than one corpuscle per two fields, as is shown by the accompanying table.

	Dr. Holmes's.	Dr. Houston's.	Difference.
Case No. 1. . . .	5,066,000	5,062,000	5,000
Case No. 2. . . .	5,860,000	5,881,000	21,000
Case No. 3. . . .	5,734,000	5,703,000	31,000
Case No. 4. . . .	5,168,000	5,134,000	34,000
Case No. 5. . . .	4,106,000	4,091,000	15,000
Case No. 6. . . .	4,712,000	4,678,000	34,000
Case No. 7. . . .	4,900,000	4,925,000	25,000
Case No. 8. . . .	5,478,000	5,450,000	28,000

Again, Daland states that when two preparations are made from the same diluted blood, and counted immediately by the same observer, a difference ranging from 187,500 to 525,000 may occur. In my experience I have found liability to error in making the second count from the same mixture, as to the reason for which I have already expressed an opinion. I prefer to verify by counting from a fresh mixture of blood.

Daland further says, "When two observers take blood from the same drop, dilute, and each prepares two slides and counts 128 squares, the results of the two observers may differ as much as 1,881,250."

Dr. Holmes and myself have never been so unfortunate when verifying each other's count by separate preparations of blood. It seems to me that the great differences in results obtained by observers may be due to the small number of squares counted, to differences in the instruments used, and to the personal equation of

the observers. The error from the last cause should be nearly constant.

Dr. Henry has shown that differences in instruments exist; and Dr. Daland shows that his enumerations are almost invariably smaller than Dr. Sadler's.

Dr. Daland considers the hæmatokrit a more accurate instrument. It is designed to exhibit the volume of corpuscles in a given amount of blood by means of centrifugal force.

Referring to the unsatisfactory results obtained by Dr. Daland and Dr. Sadler in blood counting, Professor Wilcox, of New York, in a pamphlet on anæmia, writes that he has abandoned making estimations of the numbers of blood-corpuscles, but continues the use of the hæmoglobinometer.

In spite of the doubts of accuracy thus mentioned, my experience convinces me that much reliability may be placed upon the results. By careful and methodical operation the error should be reduced to three per cent. at the highest. I have numerous cases which I have counted repeatedly, from fresh mixtures each time, and on different days, in which the results agree within a range of one per cent.

When we consider the error peculiar to each observer, the same percentage of variance would seem to attach to each case of a series counted, which series for purposes of comparison would thus not be vitiated; the relative significance of the cases would be just as valuable.

I have dwelt at some length on the question of accuracy in blood counting, because thereon hinges all the value of the operation.

Owing to lack of time the number of cases observed by me has been small, though the number of observations has been several times larger.

In 13 cases, well mentally and physically, whose blood was examined by me I found the average for males to be 5,101,000 per cubic millimetre and for females 4,764,000 per cubic millimetre. Some observers obtain greater, some smaller, numbers than these. The mean of averages by 17 observers, as computed by Dr. Daland, is for males 5,130,000, which is but a fraction of one per cent. larger than the average obtained by me.

Of the insane I examined 25 males and 27 females, as appears in the accompanying table.

These are average cases representing several of the various forms of insanity. The results, which largely confirm the conclusions of other observers, show that in a large proportion of the insane there is marked diminution in the number of red blood-corpuscles and noticeable deficiency of hæmoglobin.

Considerable decrease in the number of corpuscles was found in 60 per cent. of the males (averaging 4,427,000) and in 40 per cent. of the females (averaging 4,196,000). The percentage of hæmoglobin was much below normal in 84 per cent. of the males (averaging 74.3 per cent. of hæmoglobin) and in 77 per cent. of the females (averaging 69 per cent. of hæmoglobin).

Since many of the cases had been under tonic treatment for some time when examined, and since there are in the list but four cases of dementia which of all forms of mental disorder presents the greatest poverty of blood in the elements under consideration, I think an examination of all cases in the hospital would give much lower averages than the above. An analysis of the cases in detail would prove tiresome to listen to. I will give only general results.

MALES.

No.	Form of Disease.	Age.	Wght.	Hæmo- globin.	No. of Cor- puscles.
1	Mania a potu	32	175	95%	5,520,000
2	Toxic mania	38	170	80	5,260,000
3	Acute mania	26	108	80	5,260,000
4	" "	40	168	90	5,400,000
5	" "	43	155		5,270,000
6	Recurrent mania	74	137	70	4,910,000

Average, 85 5,268,000

7	Acute melancholia	24	175	75	4,940,000
8	" "	26	181	73	3,875,000
9	" "	15	117	72	4,390,000
10	" "	32	160	75	5,100,000
11	" "	57	127	82	4,950,000
12	" "	46	140	81	5,090,000
13	Chronic melancholia	52	130	74	4,660,000
14	" "	70	108	40	4,100,000
15	" "	49	182	78	4,045,000
16	Senile melancholia	72	145	75	4,460,000

Average, 72.5 4,561,000

17	Epilepsy	30	135	80	5,130,000
18	" "	33	170	73	4,900,000

Average, 76 5,015,000

19	Paresis	40	125	70	4,820,000
20	" "	35	145	78	4,940,000
21	" "	43	129	80	4,880,000
22	" "	44	170	73	4,340,000

Average, 75.2 4,745,000

23	Organic dementia	50	140	82	4,435,000
24	Senile dementia	73	144	80	3,430,000
25	Secondary dementia	40	128	70	4,220,000

Average, 77.3 4,028,000
Total averages, males, 76.4 4,732,000

FEMALES.

26	Acute mania	15	78	68	4,820,000
27	" "	18	123	50	4,300,000
28	" "	22	123	80	5,280,000
29	" "	20	112	70	5,000,000
30	" "	62	84	75	4,640,000

Average, 70.6 4,804,000

31	Acute melancholia	32	140	75	4,375,000
32	" "	35	97	77	4,820,000
33	" "	33	130	74	3,975,000
34	" "	33	119	80	4,800,000
35	" "	33	90	78	4,275,000
36	" "	35	96	72	4,840,000
37	" "	47	83	62	5,260,000
38	" "	37	116	69	4,725,000
39	" "	34	140	68	4,720,000
40	Chronic melancholia	63	94	50	3,997,000
41	" "	39	109	67	4,319,000
42	" "	38	97	63	4,231,000

Average, 69.6 4,528,000

43	Epilepsy	23	106	80	4,875,000
44	" "	34	106	72	3,960,000

Average, 76 4,427,000

45	Prim. del. insan.	59	178	85	5,043,000
46	" "	45	130	85	5,435,000
47	" "	35	156	95	5,035,000
48	" "	30	140	95	6,100,000
49	" "	23	130	86	4,600,000
50	" "	48	216	73	5,303,000

Average, 86.5 5,252,000

51	Senile dementia	81	93	55	3,400,000
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Total averages, females, 73.6 4,699,000

I shall make no mention of white corpuscles in the analysis of the cases, because in none did I find any considerable departure from the average number to be found in health.

Reasoning *a priori* would lead to the inference that in those forms of mental disease characterized by quickened mental processes, such as the manias, the blood would be found rich in corpuscles and hæmoglobin — while the converse would be found to exist in psychoses characterized by an abeyance or loss of mental powers as in the melancholias with sluggish circulation and in dementias. Such is in a measure the case, though the relationship between the condition of the blood and the mental state is far from constant.

Macphail says the proportion of corpuscles and of hæmoglobin in mania is equal to or greater than the normal percentages. Dr. W. Bevan Lewis says that in his experience a diminution in the number of red corpuscles is more frequently met with in maniacal conditions.

Of eleven cases of mania (six males and five females) examined by me, there was an excess of corpuscles over the normal average in five males and in three females, a deficiency in one male and in two females. The percentage of hæmoglobin was nearly normal in three males and in one female.

Examination of 22 cases of melancholia shows a marked tendency to deterioration of the blood in this form of disease. In numbers of corpuscles about 50 per cent. of those examined were below normal: 6 of 10 males (averaging 4,272,000) and 6 of 12 females (averaging 4,195,000). All the cases were deficient in hæmoglobin, the males averaging 72.5 per cent. and the females 69.6 per cent. One woman had the large number of 5,260,000 verified by repeated counts on different days. This was a case of melancholia with excitement.

Of four cases of epilepsy, too few to be of much value, two cases were found to be considerably below the normal as to corpuscles: one of these latter cases was counted while the patient was in the status epilepticus. In all the cases the amount of hæmoglobin was subnormal.

As was expected, the percentage of corpuscles and of hæmoglobin was low in the cases of paresis examined, four in number, all males, and still lower in the cases of dementia, three males and one female. The case of paresis which presented the lowest percentage was considerably demented.

The six remaining cases, all females, were cases of primary delusional insanity — paranoia. The results of the examinations in these cases were of much interest. I expected they would register high, probably at the normal average, but was unprepared to find them exceed the normal and by so much. Only one case was below the normal. One case showed more than 6,000,000 corpuscles, verified repeatedly; while five of the cases averaged 700,000 more than the average of females in health, and 860,000 more than the average for males in health. These cases also exhibited a higher percentage of hæmoglobin than did any other class of cases, 86.5 per cent., which is not much below the normal for females.

I have examined several of my cases at intervals to watch the progress of the disease and the effect of remedies with interesting results.

CASE XV. Male. Hypochondriacal melancholia, chronic, no delusions. Patient was pale and weak

at times did not feel able to go out-of-doors. Arsenic had been administered for about a month, with no improvement in mental symptoms or in the number of corpuscles and quantity of hæmoglobin. Iron, quinine and strychnine were then given. In about eight weeks he was discharged much improved. The amount of hæmoglobin had not increased from 76 per cent.; but the number of corpuscles had increased from 4,045,000 to 4,923,000, and he had gained in weight five pounds.

CASE XXVI. Acute mania in a girl fifteen years old. She was much excited and very irrational. The first count, taken during her excitement, showed the number of corpuscles to be 4,820,000 and the percentage of hæmoglobin to be 68. Her weight was 78 pounds. In six weeks from the time of the first count she had become quiet and rational. The second count then showed a loss of corpuscles to 4,360,000, but her weight had increased. Enumeration of corpuscles just prior to her discharge (recovered) showed an increase to the number of 4,775,000. The hæmoglobin had increased (seven per cent.) to 75 per cent. and her weight (20 pounds) to 98 pounds. For a tonic she had taken iron, quinine and strychnine.

CASE XXVII. Female, eighteen years old. Acute mania, with remissions. The first count was taken after she had passed through a period of great excitement lasting about six weeks. She was then quiet and rational, but a little above par mentally. The number of corpuscles was 4,300,000 per cubic millimetre; the hæmoglobin showed a percentage of 50; and her weight was 123 pounds. The second count, taken ten weeks later while she was again excited, showed a loss in number of corpuscles to 4,050,000. The corpuscles were at this time very irregular—in the condition called poikilocytosis. Five weeks later she had become quiet and rational again, when it was found that the number of corpuscles was about the same as at the second count (4,078,000) but the amount of hæmoglobin had increased (17 per cent.) to 67 per cent., and the body weight had increased by four pounds.

CASE XL. Has for a number of years been subject to periods of melancholia attended by delusions and by hallucinations of sight and hearing. Several of these periods have been concurrent with attacks of pelvic peritonitis. In March she was cheerful and as well as she had been for years, weighing about 120 pounds. In April and May she suffered from dysmenorrhœa, followed by peritonitis. She became very melancholy and delusional. In July she was convalescing both mentally and physically. On the first of August she weighed 84 pounds. Examination of blood showed 50 per cent. of hæmoglobin and 4,000,000 corpuscles. The first week in September she was cheerful and rational; her weight had increased 14 pounds; the hæmoglobin had risen (10 per cent.) to 60 per cent., and the number of corpuscles to 4,500,000. The tonic was saccharated oxide of iron.

CASE XXXIII. Female. Acute melancholia, coming on during lactation. At the time of first blood count, July 8th, she was much depressed and very irrational, with some delusions of persecution. Her weight was 130 pounds; percentage of hæmoglobin 74, and number of corpuscles 3,975,000. September 4th, the weight had increased by seven pounds; the hæmoglobin remained at 74 per cent.; but the number of corpuscles had increased to nearly 5,000,000. She is cheerful at present, but mentally rather above par.

Of the cases thus far examined to learn the results

of treatment about 88 per cent. show no mental or physical improvement, and the condition of the blood remains practically unchanged; but these examinations have not extended over a long period, and their number is not large. Macphail says: "The result of investigation, comprising over two hundred observations, would seem to indicate that the four tonics which alone or in combination were most efficacious in improving the quality of the blood may be classed in order thus: (a) iron, quinine and strychnine; (b) iron and quinine; (c) iron alone; (d) malt extract." With him the blood of epileptics was found to improve with use of bromidea, prolonged use having no deteriorating effect.

One of my cases of paresis improved much under a course of iodide of potassium, whether from effects of the remedy or not I am not prepared to say. On admission he was so feeble as to require being kept in bed; and he soon had a syphilitic ulcer appear on his leg. It was thought he would not live long, but he gradually improved. He has gained in weight over twenty pounds; the number of corpuscles has increased by about 400,000, and the hæmoglobin by 10 per cent.; and he is less boisterous and somewhat more rational.

It would be of interest to compare a series of consecutive admissions to a hospital with a similar series of those discharged recovered. Macphail thinks there is impoverishment of blood in more than 50 per cent. of cases admitted; and he says of patients who recover, that the quality of blood improves, and is not much below the normal standard on discharge.

While I am not prepared to endorse the opinion of one enthusiastic observer, that the time is coming when we shall examine the blood of our patients as regularly as we count the pulse and take the temperature, my experience convinces me that such examination will show with approximate accuracy any deterioration of blood in our patients, thus indicating need of, and perhaps line of, treatment, and that it will also aid us greatly in observing the progress of our cases and in studying the effects of remedies administered.

HYPERTROPHY IN THE POST-NASAL SPACE, ESPECIALLY AFTER CHILDHOOD.¹

BY JOHN W. FARLOW, M.D., BOSTON.

THE importance of nasal respiration has been so frequently insisted on in the last few years that there is no need for me to call your attention to it this evening. The post-nasal space, where the horizontal passage through the nose turns to become the vertical passage to the larynx and trachea, should be free from obstructions and encroachments, just as the bent heating and ventilating pipes of our houses should not be choked up or narrowed at the elbows and bends. The fact that air goes through the nose, and the mouth is not habitually open does not, by any means, prove that there is no nasal obstruction. The body can adapt itself to various abnormal conditions and overcome them after a fashion, but the work performed is almost certain to be imperfect in certain particulars. It has seemed to me that a very erroneous idea of the nature of free nasal respiration was prevalent. The post-nasal space may contain a large amount of hypertrophied tissue; the patient may claim that he can

¹ Read before the Boston Society for Medical Observation, November 6, 1893.

breathe well through the nose; he may not be a mouth-breather; he resents the idea that there can be any obstruction to his breathing; he has never had any other nose, and has never breathed better than he does now. But after the removal of the hypertrophy he will confess that he never really breathed well before.

I have seen so many instances of this, and have been told so many times by physicians that such and such a case had no post-nasal hypertrophy because there was no mouth-breathing, cases where I have later removed large, obstructing masses, that I feel the importance of insisting that mouth-breathing is only one of the symptoms of nasal obstruction, and that considerable obstruction can exist without mouth-breathing, especially in adults.

The same holds true of snoring. If the soft palate is pushed forward and kept from applying itself against the posterior pharyngeal wall by large growths behind, it becomes parietic, and easily flaps backward and forward in sleep, giving rise to marked snoring. But the palate may be strong, the obstruction high upon the posterior wall, and snoring entirely absent.

If, then, two of the great cardinal features of post-nasal hypertrophy may be wanting, we should naturally expect that many cases would be overlooked, and such I believe to be the case. The degree of obstruction depends upon the relation of the size of the obstructing mass to the space in which it is contained. In young children the post-nasal space is very small, and a small amount of growth would naturally cause very different symptoms from the same amount in a larger child. If the tonsils are very large, narrowing the throat from side to side and preventing the free play of the palate, a smaller amount of growth behind the palate would suffice to cause more marked symptoms than where the tonsils are small.

If the growth is spread out uniformly on the upper part of the posterior pharyngeal wall, the symptoms will differ from the cases where the growth is massed together near the posterior openings of the nose.

With regard to the frequency of post-nasal hypertrophy after childhood, I should say that such cases are very common. The idea that adenoid disease nearly always atrophies after puberty, leaving no enlarged or diseased structures behind, is entirely erroneous. That many such cases are called nasal or post-nasal catarrh, or are attributed to slight deviations and ridges of the septum, or to large tonsils, prevents them from being properly recognized and placed in the category where they belong. But whoever makes frequent and thorough examinations of the post-nasal space with the rhinoscopic mirror must soon be convinced that a pathological amount of adenoid disease is very common after puberty, even up to thirty-five years of age. At puberty the whole region of the throat enlarges, and more open space for respiration exists in the back of the nose; but the diseased glandular tissue is not so prone to disappear, and continues to secrete, inflame and cause trouble by its presence in a different way, ordinarily, from what it did before.

Let us consider what symptoms we may look for where there is no respiratory obstruction. The post-nasal space is a great centre for reflex action, and naturally resents the presence in it of any growth, just as it would a foreign body. A very common symptom in such cases is a dry, hacking cough, often very per-

sistent and more or less paroxysmal. This is quite apart from the cough due to secretion dropping down into the pharynx. Scraping of the throat and sniffing are also endeavors to get rid of an irritant. I have occasionally seen picking of the nose, and more often an outward forcible expulsion through the nose, an evident desire to get rid of an irritant behind the nose. Particularly in young persons is it important to examine the post-nasal space in cases of obstinate cough. I have seen one case of torticollis apparently caused by the presence of a small, firm adenoid. I have also seen several instances of chorea where the post-nasal congestion and irritation seemed to be a factor in the disease.

The glandular nature of the growth shows itself by profuse secretion, tendency to engorgement and proneness to inflammation. Repeated colds are common, and constant sniffing and a loose cough become a part of the daily life. The secretion dropping in the throat keeps the tonsils and pharynx in a state of congestion and hypertrophy. A gland does not need to be large to secrete a surprising quantity and hence the importance of not overlooking the post-nasal space even when there is good nasal respiration. In acute follicular disease of the tonsils, we should also bear in mind that the follicular tissue of the vault is probably also involved and merits attention. I have seen a number of cases where the faucial tonsils were hardly affected at all, while the pharyngeal tonsil was swollen and covered with a whitish exudation and the constitutional symptoms were very marked. In adults, it is not uncommon to find considerable secretion at the vault, apparently having its origin in old diseased glandular remains. I have seen the same after operation where the follicular tissue had been only partially removed, leaving a certain amount of diseased and secreting gland behind, an argument in favor of thorough removal. I have sometimes thought that the amount of secretion had been increased by the incomplete removal.

I shall say nothing of the bearing that large adenoid masses have on the hearing. Such cases usually have other marked symptoms which attract attention, and hence are not likely to be overlooked. But the smaller growths, less easily recognized, and occurring in adults, have a very great significance as they are apt to be overlooked until the hearing has become quite impaired in one ear, or tinnitus aurium has demanded attention. They act more slowly and accompany or cause the more chronic disease of the hearing. It is the situation and nature of these growths which makes them of such importance to the aurist. Small growths in the fossa of Rosenmüller, which keep the Eustachian tubes closed, swollen and bathed in secretion, require careful removal. I have seen a number of instances where bands, the remains of old adenoid tissue, stretched across from the Eustachian eminence to the vault, interfering with the function of the tube.

While the post-nasal space remains in a state of congestion and hypertrophy, the ear must suffer. I am sorry to say that many of the cases of chronic disease of the middle ear, probably caused by a moderate amount of adenoid disease existing undiscovered for many years, are often not much relieved by the removal of the adenoid growth. I think the attempt should certainly be made to free the tubes and the post-nasal space with the hope of relieving the ears, but the benefit is much less certain to follow than in

the early, acute cases of childhood. This is all the more reason for systematic examination of the post-nasal space at as early an age as possible, even when there are no special symptoms.

The deformed mouth, the high arch and projecting upper teeth, are well recognized results of nasal obstruction. The alienist lays great stress on the high palate as a mark of mental deficiency, but the dentist and the physician who sees much of nasal disease are certainly aware that a high palate often has no connection with mental inferiority. In an article on deformed vaults in the *Dental Cosmos*, for November, 1893, Dr. E. S. Talbot says: "In cases of arrest of development of the bones of the nose, and adenoid growths, when it is impossible for the child to breathe through the nose, and mouth-breathing is a necessity, the jaws are separated, and the teeth not having a resting-place, the alveolar process elongates, and a high vault is almost always noticed; hence the reason why imbeciles, and all degenerates who keep the mouth open, as a rule, have high vaults." There remains much to be learned on this subject. I have seen a number of cases of high palate in children where there had never been nasal obstruction and where the mental faculties were very bright, and also a smaller number of instances of marked adenoid obstructive disease where the palate was not high. Where the palate is very high arched, the post-nasal space is sometimes narrow and very high. In operating in such cases, I have been surprised on removing a large amount of growth to find that I needed to go still higher to a second or even third story of growth before reaching the high vault. Such cases are sometimes deceptive in the rhinoscopic mirror. The post-nasal space being narrow, the growth may look small, and one is surprised on learning the vertical diameter of the growth. When dentists attempt to spread the upper jaw in young persons where the post-nasal space contains a considerable amount of obstructive hypertrophy there is sometimes a degree of nervous irritation caused which renders it impossible for the patient to submit to the spreading-plate. I have seen several such cases with dentists, and not until after the removal of the adenoid growth could the dental work be continued with satisfaction.

The importance of a free post-nasal space can hardly be exaggerated. There may be plenty of room for nasal respiration, there may be little or no secretion, but if the posterior wall and vault are covered to a greater or less extent with a thickened tissue, the voice loses just so much resonance, carrying power, and part of its upper register. Our New England climate is held responsible for many thick, catarrhal voices, but this can be overcome in many cases by attention to the post-nasal space and removal therefrom of secreting and hypertrophic structures. I have seen a gain of several notes in the upper register after the removal of a small, soft mass at the vault. The voice does not tire so soon, and can be used much longer at a time in speaking or singing.

The diagnosis is most surely and accurately made with the mirror. I am not speaking of cases of great mouth-breathing, etc., where the symptoms are very marked, and where the finger readily determines that the post-nasal space is filled, I refer rather to cases where the symptoms have to do with the other functions of the post-nasal space than the respiratory. The upper jaw may be very long, and it may be diffi-

cult to reach the vault with the finger. The patient can tolerate the finger for a short time only, and accuracy in diagnosis is impossible. I once operated, under ether, on a case where I had not made a positive diagnosis. The space between the uvula and the posterior pharyngeal wall was so small, owing to projection of the spine at this spot, that I was unable to see anything with my smallest mirror, and the upper jaw was so long that I was unable to reach the vault, even during anæsthesia.

There is sometimes more hypertrophy at the vault than appears in the mirror, as the growth may be of a fairly uniform thickness, or the vault may be very high and able to contain a great deal more tissue than usual. The probe is an aid in such cases. We often see irregular masses with clefts between, and are surprised to find how far the probe will enter into these clefts, from which there may exude a copious secretion. Such are remains of Luschka's tonsil, which has taken on a diseased action.

The regions near the Eustachian tubes should be carefully examined for bands, or small projections, which interfere with the function of the tubes.

The size of the cavity should be carefully noted, as the smaller the space, the greater the discomfort from a given amount of hypertrophy. I should say that in young persons great enlargement of the tonsils was almost invariably accompanied by a considerable degree of hypertrophy at the vault, especially if there is any mouth-breathing.

Treatment in the mild, soft, secreting cases consists in the use of cleansing sprays and various astringents, such as iodine and glycerine. But most cases will require removal by surgical means. Cocaine serves to diminish the pain, and with the co-operation of the patient, the desired pieces can be removed with great accuracy. If anæsthesia is necessary it should be light, as it is much safer than deeper anæsthesia where considerable quantities of blood may enter the air-passages.

Sometimes caustics or the galvano cautery are of use, especially where the diseased and secreting clefts and sinuses are present. My own preference is for forceps, while others favor curettes and various snares. The important point is to remove all the diseased hypertrophied tissue. The lower pharynx should also be treated whenever there are any large follicles present.

THE EFFECT OF CLIMATE AND ENVIRONMENT ON THE NEW ENGLAND GIRL.

BY J. WARREN ACHORN, M.D., BROOKLINE, MASS.

MAN and the forest, man and the mountains, man and nature grow together. Wherever you find the highest mountains, the mightiest forest, (the forest that knows no ancestry,) the deepest ocean, the most graceful lakes (like those one sees in Switzerland), and hear the roar of the cataract that tells of a mighty river, there the most rugged and characteristic in nature abounds (the climatic conditions being also favorable), there you find the noblest type of man — the finest physically, and if civilization has reached him, and educated minds have helped his own to think, the physically and mentally proportionate man. There you find the most potent man and the most thoughtful; not necessarily the tallest, though the race grows tallest in the tallest country; not necessarily the shortest,

though the shortest usually grow where the hills are stunted; not necessarily the brawniest, though the brawniest grow where the physique is greatest and the heart and the perception and the emotions, as well as the endurance and skill, are all appealed to. When you have that combination of brain and body in keeping with a mighty country and its climate, other things being equal, there man works out the longest life and the greatest measure of happiness and usefulness, for happiness and usefulness depend more upon a well body and a contented mind than upon anything else in the wide world.

Who ever thought of hunting for grizzly bears on the rice islands in the delta of the Altamaha? The fierce Numidian lion is no longer a lion if born in a cage and fed with a fork. The gray wolf of the Michigan forest stands you at bay, and snaps and snarls defiance at your coming. I have seen a whole pack of prairie coyotes disappear at the twirl of a finger. Who ever thought of looking for the white-pine of the Maine forests or the pink-pine of Oregon—the masts for ships that sail the world around—in the coast-plain country about Albemarle and Pamlico Sounds, where only the stunted loblolly grows—rough-barked, all sap, with little heart, standing there with half-starved look among the coarser grasses of the great morass? Who ever thought of looking for the finest type of negro among the sand dunes that rise above the level of the waste places in the Great Dismal Swamp? Why the darkey of the uplands despises the rice-island “nigger”; and the southern planter when he would harvest seeks not the coast-plain idler but the foot-hill dweller. Who ever saw the coast-plain negro seeking a home among the mountains that stretch from Harper’s Ferry to the Mississippi? Never does he do it. The negro of to-day weds the plain. He loves the hummock lands that lie along the Suwanee River far better than the sight of mountain peaks that, rising in succession, overpower his imagination and appear to him but the tents of great giants who are resting for the night but with the morning will go on; and the thought for his life, like the great hills he is gazing upon, makes him superstitious and afraid. Mentally he is not equal to the eternal hills. His cabin home is not found beyond the uplands. His mind is still in the beginning of its thought. Later on he may exchange the plain for the mountains, the muddy lagoon for the crystal lake, the red-running river for the sparkling waterfall, the stunted low-land pine for the mountain valley variety with its longer shatter, whose top sighs an hundred feet in air and the whisper of whose voices make for silence. The Sioux Indian of the northwestern prairies is no match for his neighbor, the Chippewa, whose possessions rise where those of the Sioux leave off. The Sioux knows only his pony and the prairie. His arms are small and his chest narrow; and his strength, aside from his hips, is slight. The Chippewa’s shoulders are broad, his arms powerful and his back strong. His horse is not the prairie pony but the birch canoe. His battle-field has not the sameness of the plain nor has his physique, but the grandeur of the hills and the ever-restless waves of the great inland seas.

I have been trying to show that the country marks the man. The American is recognizable from whatever part of our country he may have come, not only because he is imbued with the American spirit which

crops out and betrays him, but also from his American physique—the elongated head, the fine and transparent skin, the quick-glancing eye, the mobility and flexibility of body, the changing features, the genuine laugh, the nervousness of his movements. But if the four present types of Americans from the north, south, east and west are brought together, their likenesses are not so apparent. There yet remain differences due to climatic influences and the topography of that particular section of country from which he came, environments that declare for him what manner of man he is. Never could I persuade the old darkey woman of the South, the Auntie whom everybody knows, that I was a Southerner. “Ah, boss,” she used to say, “you’s come a long ways north of hyer.”

The Yankee is recognizable everywhere; there’s no mistaking him. The figure of Uncle Sam is the traditional Yankee. Here in New England the people grow tall and lank, and their temperament becomes vital and nervous. I believe the New England people are becoming nervous and dyspeptic, although born in a rugged, picturesque country that is reputed to and should produce a rugged, characteristic race. They eat little and hurriedly; they sleep little; they have a burned-out look that bespeaks nervous strain and malnutrition. They worry and they tremble. The women lose their rotundity and the men strive; and both grow thin.

The Southerner comes among us from the land of flowers and ease, with the grace of one accustomed to repose and leisure; but before the Indian Summer is over and the birds are flown, the feeling that he must hurry begins to possess him, and by the 1st of March he is on the run with the rest.

The foreigner comes to us from the rational-living, slow-going countries of the Old World. At first he is astonished to see us get up from the table and leave him to take his dessert alone. He preaches moderation; but the wild race of the people, and the climate, will not let him have it.

And the German of to-day, whose grandfathers landed here two hundred years ago, is no longer a German in appearance; the country has trade-marked him. In spite of the lymphatic, phlegmatic temperament of his ancestors, who were thick-set, broad-shouldered, beer-loving and sausage-eating, he has the refinement of figure and the vital temperament of the Yankee. “He is the European” as somebody has said, “with a drop of nervous fluid added.”

Gladstone’s longevity may be due in part to this act of his life, that he never cuts a string from a bundle, but takes time to untie the knot. What are we born and living for? Is it to hurry? For money? For dyspepsia? For a pain in the side (the virtues of which we recite every morning at table)? For the bubble of a reputation? Or is it rather for happiness and usefulness, so that some one at least, may say of us when we are gone, that he has been happier and better because we have lived?

At ten, the school-girl is physically the equal of the boy. She can run as fast as he; she can jump as high; she can tussle him down over half the time in a rough and tumble; she can skate; she can slide knee-fashion on a sled. The one thing she cannot do that he can do is, throw a ball; but that is not due to her physical condition but rather to an anatomical difference in the shoulder.

What is it then that between the ages of ten and

twenty kills the girl physically, and establishes upon this continent and particularly in New England, a new disease which the Germans style *Americanitis*—American nervousness? And why, if the boy escapes, in part at least, does not the girl escape also?

And first the boy; the country has marked him for its own. Like the man of whom we spoke at length, he is tall and spare and active. He is a typical child of New England parents. But he escapes; and there are two reasons for his escape. The first is, that he *will* play; that he *will* stay out-doors, *will* indulge in recreation of all sorts; that he *will* not study, that is, will not exert himself to the point of going to bed tired from study, rather than tired from play. That is where he is right. In other words, his physical status keeps abreast of his mental advancement and savors constantly of it, so that at the age of twenty, when his mind is really beginning to get on its legs and think for itself, he has a body back of it that is equal to the demands made upon it. And so he continues to grow. At twenty his physical strength is twice that of the girl with whom, at ten, he used to play as an equal.

Now how is it with the girl? At ten, she is the physical and mental equal of the boy. She is doing the same amount of school-work, brain-work, as the boy, and, if anything, is doing it better. To this is added for each day an hour or two of nerve-work at the piano, or at the easel. By the time she is fifteen her dresses have grown, in length, to the ground, and in weight, beyond what any woman's hips should ever carry. By this she is hampered. In addition to these burdens and drain upon the strength, she is helping her mother in home duties daily. Then because every daughter or young woman at home should know the world and learn to carry herself in it, social exertion and excitement are beginning to crowd upon her and eat up her evenings and prolonged periods of rest. Time for recreation of the physical strengthening sort is denied her. Or, perhaps this is not her case; she may have gone out for work and bread-winning as a stenographer, type-writer and book-keeper combined, to become a sort of an electric machine, an organette that will play three different tunes, with her nerves for wires, and her body for a key-board. This comparison, as you will see, is in favor of the organette as against the girl; for the girl has not only to furnish the music, but she has also to turn the crank.

Our typical girl then, does not only the work of the boy, during the formative years, the growing years, when she is naturally perhaps the weaker vessel, but she is doing also, house-work, needle-work, music-work or painting, or taking care of *possibly* invalids or children. To these must be added social forms of which I spoke, most exhausting demands upon her strength, such as making three-minute calls (which a boy will never do, bless him!) or playing good angel to family hand-downs, stupid people who come and stay and absorb one's time and strength as a sponge absorbs water. Add to this the growing dress and the proprieties that must attend its wearing, its hinderance to free movements, and we have one factor more in the count of the things that go to destroy the health of our school-girls. Woman's dress with her entering the avocations of men is a tremendous negative. Not an element in it belongs to a busy, open, exhaustive life. It was devised under and is a result of conditions wholly at variance with such a life. It is fit only for the retired, protected, domestic living within doors, like

that our grandmothers enjoyed. They dipped candles, made apple-butter by September firesides, pickled meats, and knitted their own stockings. It belongs to the time of homes, and not flats and janitors.

Now, further, add to what I have already summed up the fact that a young woman's work is almost entirely mental, spiritual, or vital, preying upon emotions as well as intellect, all through her school life, and that her physical development is practically cut off at fifteen, when she needs physical training most; that the very best blood in her veins is constantly used to develop her brain at the expense of her body, when it is just as necessary, and more necessary, that the hips and shoulders get their share, since they are the parts physically the most used and needed and abused afterwards, and the first to suffer because they have been robbed. Consider that in whatever capacity she works, the girl of to-day is pitted against men, working under laws set for men, working under negative influences—for in many of the pursuits into which they have entered they are not wanted; and is it any wonder that they grow tall and gaunt and have a burned-out look, and finally break—not mentally, but physically, before they are thirty?

At twenty the boy is just beginning to put on steam. At thirty, if he has not broken himself in some vain effort to get rich in a hurry or wear his father's shoes before he is out of college, he is in a position, both mentally and physically, to do his life-work. But if he has taken the other course, he is on a par with the girl I have been describing to you. At twenty, she has mental development in excess; but at thirty she is only a shell—mentally developed, physically good for nothing. Good for a trip down-town perhaps, or two hours' work in the morning; good for one child, but an invalid after that; good to adorn the end of a sofa for the rest of her life; always a cause of concern and regret for others; never contented; never quite happy; never altogether useful in the best sense. Always, as a bird in a cage, she struggles against the bars that fetter her freedom.

I contend then that whatever we do, it is not so much a question as to whether we have brain enough, but have we body enough? Whatever we do we must keep within the *physical limit*. If one is not held by mental inability, but is held by physical disability, then gracefully accept fate and be guided by that. If, on the other hand, the physique is perfect and never tires, then work as hard as you please and drive the mind of mediocrity to its highest level.

"Going to college, are you?" said an old physician to his son. "Well, if you come out all head and no body, or all body and no head, I wouldn't give a copper for you; but if you come out pretty well mentally and pretty well physically, you'll get along in the race."

"Getting along in the race" is exactly the idea. We cannot all of us be orators or great poets, or great singers. We may have the brain but not the physique, or the physique and not the brain; though on the average I think it is fast becoming, with Americans, not so much a question of brain as physique.

Particularly I think this true here in the East where there is repose of neither body nor mind. This nervous climate is telling upon us, but more upon the physique of our women than upon that of our men. What advantage is it to be first mentally in some accomplishment, as, for instance, first in English literature, if after you get it you spend your life in semi-invalidism.

Of what advantage is it to become an intellectual slab, tattooed with Greek and Latin, if after you are so adorned and honored you can neither work nor walk, but must go to bed with it. If you are acquiring something for the use you intend to make of it — *brod studien* — what does it profit to give all your health and strength to approximating perfection when you never shall be able to use it to any advantage for the purpose for which it was intended?

And now about these women whose occupations are not essentially intellectual. Watch the eight-o'clock girl as she hips it across the Common toward Park-Street Church on the way to some of those great kitchen emporiums down-town, where she stands all day long and sells dippers or diamonds. She is alone. They are birds of solitary passage. She has a business nose and the air of publicity. Shoulders high — she is lugging them. Hips narrow — a fact not infrequently commented upon by the stranger physician in the town. A bunch of clothes hang from her undeveloped hips, practically from the small of her back. She tips forward to offset their weight and settles back to ease the strain. Her life during the formative years fitted her for anything but what she is now doing. She taxes every part of her body every day to its utmost that all through the growing years she unconsciously and unknowingly robbed and starved. From ten to eighteen she was worked and taxed from her waist up, since that time the strain has been from the waist down. Her early attainments, if any, are little called into this daily bread-winning account.

Watch the nine-o'clock girl, as she comes an hour later. She is a little better dressed, a little fresher in look, a little less hurried; but still she has that indefinable something in her general appearance that tells she is working on her nerves, or with them to an extent that is drawing upon her general health and strength. She is the personification of the organette I have already pictured.

And now comes the half-past-ten-o'clock girl. She is well-dressed, with a rounded figure and a lazy air and an expression of intelligence and mental alertness that is both refreshing and pleasing. Perchance she is the rich man's daughter and has lived, a part of her life at least, where the balm and aroma of the orange and magnolia, and the swaying grace of the gray Spanish moss has coaxed her into repose and forgetfulness of ambitions and the cutting north winds of this land of ice and industry. Mere beauty needs no appeal; it makes its own. Physical health with adequate harmony of mind and heart, however, be the woman ever so plain, has its attractiveness and its reward in a long and useful life.

Whenever I hear a young man or woman say, he or she is working on nerves, I know at once that sooner or later, the break will come. And when they do break they break all over. The wreck is often complete. All other parts of the body are servants to the nervous system. The nervous system is the last to be perfected, the last to be matured. It is the last to give way. It is king, but the most unsympathetic of all rulers.

One's head is one's capital city; one's body the outlying country. The city people are consumers; the country people, producers. If the body — the country — is thrifty and prosperous and peopled, in time, and time enough, the brain will be full. But if the city is filled with people in proportion to its capacity, the city is over-peopled in proportion to its capacity.

able to provide for, in time the city, that is, the brain, will starve. In other words, an acute brain by its very activity makes demands upon the body that only a well-conditioned body can supply.

The boys and girls of to-day, born of nervous parents, when they become fathers and mothers cannot but produce children more nervous than they themselves were. The law of hereditary transmission is unerring and never-failing. We are made up of two-thirds of what has been and one-third of what is.

Train the mind, but not at the expense of the body during the formative years. They do better life work hand-in-hand together, since they are mutually dependent and inseparable as links in the golden chain of right life and living. Whatever else we do or don't do, we should keep within the physical limit and be satisfied to stay in that field and upon that plain to which we are fitted, both mentally and physically.

Happiness and usefulness depend more upon a well body than anything else in the wide world. Success in life, as the world sees it, does not necessarily bring happiness. Gratified ambition satisfies only vanity. But vanity satisfied and ambition satisfied — bodily strength *nil*, and the nervous system shattered — what avails it to live?

Clinical Department.

APPENDICITIS, WITH APPARENT RESOLUTION OF ABSCESS; RELAPSE; DEATH; AUTOPSY.¹

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

THE case which I shall report this evening occurred in the practice of Dr. Coxe, of Riverside, R. I., who has kindly given me the history of the first four days of the disease.

The patient was a young man, twenty years of age. On Friday, November 10, 1893, he went to work as usual; but during the afternoon complained of severe pain over the ileo-caecal valve, and in the evening there were chilly sensations followed by several attacks of vomiting through the night.

On the morning of the 11th the temperature was 101°, pulse 108. Percussion note normal over entire abdomen, but there was considerable tenderness over the region of the appendix. The bowels had not moved in four days. In the evening, the pulse was 120 and temperature 102°. There was a little fullness over the appendix, with slight dulness and tenderness on percussion. During the night there was a severe chill.

On the 12th, the third day of the disease, the condition being unchanged, the bowels were thoroughly evacuated by castor-oil, and in the evening there was some improvement. The temperature had dropped to 100° and pulse to 96. There was less tenderness and tympanites. During the night the bowels moved freely twice.

On the morning of the 13th, the fourth day of the disease, there was a change in the symptoms. There had been no vomiting for eighteen hours. The temperature was 99° and pulse 90. The skin was moist. There was no tenderness, no tympanites. The patient felt better and wanted something to eat. Resolution had apparently taken place. The diet was restricted to milk and lime-water.

On this day, a kind friend brought in some grapes,

¹ Read before the Providence Medical Society, December 4, 1893.

which, of course, were eaten. During the night there was a severe chill, with vomiting, which contained bile for the first time. After the chill there was profuse sweating.

On Tuesday, November 14th, I saw the patient with reference to operation. At this time, while talking, there was another slight chill, lasting perhaps five minutes, followed by profuse sweating. There was no sign of mental disturbance. The tongue was coated, the centre being dark brown. Temperature 102°, and pulse before the chill being about 100 and of fair strength. The abdomen on the left side of median line was soft and easily compressible. No tenderness on pressure. On the right side, there was some resistance to pressure, most marked over McBurney's point, and radiating outward to the median line and upward to the border of the liver. Firm and deep pressure revealed considerable tenderness, but nothing could be felt in the shape of a tumor. There was also slight tenderness near the border of the liver. On percussion there was very slight dullness over the area about McBurney's point, and even with the hand pressed well down during the percussion nothing more definite could be learned. There was some tympanites which was generally distributed over the abdomen.

Here was a case of appendicitis which had reached its maximum on the third day, with apparent resolution on the fourth day.

On the fifth day or during the first twenty-four hours of the relapse, with no palpable tumor, and nothing definite on percussion, the patient being in fair condition, I deemed it best to wait twenty-four hours, and to watch the patient carefully in the meantime. I left about three P. M. on Tuesday; and the patient died in collapse about three A. M. on Wednesday.

AUTOPSY.

The autopsy was performed by Dr. W. W. Hunt, who kindly asked me to assist. Dr. Cox was also present.

The abdomen was opened by a long median incision from the ensiform cartilage to the pubes and also by an incision extending from the lower end of this one diagonally into the area about McBurney's point.

The omentum in the middle and all over the left side and some distance to the right of median line was perfectly healthy. In the right iliac region it was congested and matted together into a bunch. This portion was adherent to the intestines beneath.

On lifting the omentum the intestines were found considerably distended with gas. In the hypogastric, the right inguinal and right lumbar regions, the peritoneal surface of the intestines was congested. In all the other areas they looked perfectly healthy.

Pus was found, to the extent of two or three drachms, free in the abdominal cavity, in the right lumbar region. The intestines were adherent to themselves and to the abdominal wall; everything being bound down to one point, where, when the adhesions were broken up, the appendix was found. It extended outward and upward on the outer surface of the cæcum, being closely adherent. About the appendix was a circular ulceration, nearly as large as a silver dollar. The appendix was easily separated, was congested, but not gangrenous. The ulcer had not extended through the intestinal wall, but the tissue broke down at the slightest touch. This was evidently where the small abscess had existed.

Another small ulcer, about the size of a silver quarter, was found on the anterior surface of the ascending colon near the hepatic flexure. This point was also adherent to the abdominal wall, and the colon was adherent to the liver.

Looking at the case from the post-mortem appearances, it is probable that an operation on Tuesday would have hastened death.

The usual incision would have revealed the appendix and the ulcerated surface to which it was adherent; but whether or not the second ulcer would have been discovered is a question.

The only time that an operation could have resulted favorably was during the first attack; and at this time it was not demanded, as the disease apparently ended in resolution.

It is fair to presume that if the case had been operated as soon as the diagnosis was made, a life would have been saved.

The great question to decide in all cases of appendicitis is, when and when not to operate. There are a few surgeons who have placed themselves on record as being ready to operate as soon as the diagnosis is established, and the tendency of surgical opinion to-day is undoubtedly toward that point.

I offer this case in detail as a plea for immediate operation.

Medical Progress.

REPORT ON DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

INFLUENCE OF INFECTION UPON THE NERVOUS SYSTEM.

ROGER,¹ recognizing that all infectious diseases may affect the nervous system to a greater or less degree, admits the following divisions:

(1) Reaction of the nervous system in the course of the most diverse acute affections: fatigue, headache and sometimes delirium and convulsions may occur in the course of all forms of infectious disease. These symptoms may depend upon an accumulation of the noxious substances which are constantly forming in the organism, or upon difficulties of elimination.

(2) By the side of these general phenomena of a toxic order we must place the secondary localizations of the infectious process in the nervous system. We often observe paralysis following acute diseases analogous to the paralysis which follows diphtheria. This paralysis may be transitory and due to no organic alteration, or it may be due to lesions of the peripheral or central nervous system. "We admit for tabes, or rather for all scleroses of the nervous system, what we admit for scleroses of other organs. It is demonstrated by clinical observation and by experiments that visceral scleroses may arise from infection or intoxication. In this way syphilis plays a more important rôle than other infections, and represents a chief cause of the sclerotic process, its localization depending upon the predisposition of the individual affected."

(3) Certain nervous diseases may represent a primary localization of the morbid process, in particular infectious multiple neuritis and acute poliomyelitis;

¹ *Revue générale des sciences.* 15 April, 1893.

others always represent a primary infection of the nervous system, as is the case with hydrophobia.

(4) Infection may be the starting-point of nervous accidents which are sometimes very persistent, but which seem to be due to no material lesion; it may provoke the onset or the reappearance of various neuroses. Hysterical phenomena, epilepsy, paralysis agitans, and especially chorea, frequently present themselves under these conditions. With regard to chorea the author thinks that the influence of rheumatism has been somewhat exaggerated, yet he considers that rheumatism is to chorea what syphilis is to tabes. [Yet the statistics with regard to the two affections show a much more intimate relation between syphilis and tabes than between rheumatism and chorea. REP.]

Many of these facts can be verified by experiments: paraplegia represents in the lower animals an ordinary reaction, observed after the inoculation of all sorts of microbes. The author has even produced experimentally a chronic poliomyelitis of infectious origin, which demonstrates the rôle of infection in the development of certain systemic forms of myelitis; and other observers have obtained analogous results. The microbe acts as poison does, and both may give rise to troubles or lesions which the most elaborate vivisections are incapable of realizing.

DISTURBANCES OF SENSATION IN VISCERAL DISEASE.

Head² has made an extremely valuable and interesting study of the distribution of pain and cutaneous tenderness in visceral disease. He found that the pain was in many cases associated with cutaneous tenderness, and, where tenderness existed, the pain lay in that area. If the tenderness be present at one time and not at another, but if the pain remain, tenderness always makes its appearance in the area said to be painful. The tenderness is not deep-seated, but is purely cutaneous or subcutaneous. One of the best methods of eliciting it is to pick up the skin gently between the finger and thumb, or the pressure of the broad blunt head of a large pin may be used. These areas of tenderness bear a definite relation to the different organs affected, but in many cases they lie at a considerable distance from the organ affected. The pain produced by stimulation is not produced by any action on the organ itself, which may lie at a considerable distance from the tender spot. Again, the tenderness may be on the right side, though the organ affected lies on the left side of the body. The superficial reflexes are usually exaggerated over the tender areas produced by visceral disease. Suspecting that these areas bore some definite relation to nerve distribution, Head undertook the study of the distribution of herpes zoster. The eruption of herpes does not follow the distribution of the peripheral nerves at all, and these areas of the herpes eruption agree with the areas of tenderness in visceral disease; in neither case do they overlap, and they have the same maxima. They are also clearly defined. It is not at all likely that these areas have any relation to the cortical distribution, and, as has been said, they certainly have none to the distribution of the peripheral nerves. The areas of distribution of the posterior roots overlap greatly and the border of anaesthesia is not definite. The areas of herpes and tenderness in visceral disease do correspond most closely to the areas of analgesia in lesions of the spinal segments. (The areas of anaesthesia in lesions

of the segments are less extensive and less definite.) After a careful study of the tenderness in different forms of visceral disease, the author concludes that the pain and tenderness are referred along the distribution of certain somatic nerves corresponding to the different spinal segments, and this sensory supply of the viscera corresponds very closely to Gaskell's³ scheme of their motor and inhibitory supply. The sensory supply is as follows:

HEART.—1st, 2d, 3d dorsal segments.

Cervical plexus [= depressor?]

LUNGS.—1st, 2d, 3d, 4th, 5th dorsal.

Cervical plexus [= vagus?]

STOMACH.—6th, 7th, 8th, 9th dorsal.

Cardiac end from 6th and 7th.

Pyloric end from 9th.

INTESTINES.—[A] Down to upper part of rectum.

9th, 10th, 11th and 12th dorsal.

[B] Rectum.

2d, 3d, 4th sacral.

LIVER AND GALL BLADDER.—7th, 8th, 9th, 10th dorsal. Perhaps

6th dorsal.

Cervical plexus [= vagus?]

KIDNEY AND URETER.—10th, 11th, 12th dorsal. The nearer the lesion lies to the kidney the more is the pain and tenderness associated with the 10th dorsal. The lower the lesion in the ureter the more does the 1st lumbar tend to appear.

BLADDER.—[A] Mucous membrane and neck of bladder.

[1st], 2d, 3d, 4th sacral.

[B] Over-distension and ineffectual contraction.

11th, 12th dorsal, 1st lumbar.

PROSTATE.—10th, 11th, [12th] dorsal.

1st, 2d, 3d sacral, 5th lumbar.

EPIDIDYMIS.—11th, 12th dorsal, 1st lumbar.

TESTIS.—10th dorsal.

OVARY.—10th dorsal.

APPENDAGES, ETC.—11th, 12th dorsal, 1st lumbar.

UTERUS.—[A] In contraction.

10th, 11th, 12th dorsal, 1st lumbar.

[B] Os uteri.

[1st], 2d, 3d, 4th sacral, [and 5th lumbar very rarely].

In unilateral affections the pain and tenderness is very apt to be bilateral, possibly because the organ may receive some fibres from either side of the cord. In most cases if the patient be debilitated, or if the affection persist at all, the pain and tenderness tend to spread to other areas, often very remote from the original area; as is seen by the aching and tenderness in the legs in follicular tonsillitis. Anaemia and fever are very common causes of this generalization of tenderness, which generally occurs in various acute diseases, such as influenza and typhoid fever.

ACROPARÆSTHESIA.

Schultze⁴ describes under the name of acroparæsthesia that form of paræsthesia which is often painful and is localized chiefly at the ends of the extremities. He reports twelve cases, and gives the following account of the symptomatology:

The affection is most common in women (although half his cases were men) who have passed the thirtieth year, and its chief localization is in the hands and fingers. It usually takes the form of formication, but it may increase to actual tenderness and may extend up the arms or legs. The affected parts feel stiff, and fine movements may be slow or limited. The paræsthesia may be worse at night or on waking in the morning ("waking numbness"), and it may be worse in winter. It is usually obstinate and it may last for years. The color of the skin is usually unchanged, but it may be very white and cold during the attacks; it is never red. The sensibility is usually normal, but during the attacks it may be blunted, and hyperæsthesia and hyperalgesia are not uncommon. The nerves are

² Journal of Physiology, vol. vii, 1885.

⁴ Deutsche Zeitschrift für Nervenheilkunde, iii, 300, 1893.

³ Brain, Spring and Summer Number, 1893.

not tender; there is no atrophy; hysterical symptoms are wanting; the joints are not affected; but the affected limbs may be weak.

Schultze then discusses the various theories which have been advanced to explain the disturbance. He admits that the occasional pallor of the affected parts lends some support to Nothnagel's theory of a vaso-motor disturbance, but this pallor is by no means to be observed in every case, and it is hard to understand why, as sometimes happens, the warmth of the bed should cause arterial contraction. He therefore regards the contraction as merely a co-ordinated symptom. The absence of pain and tenderness, of muscular atrophy and degenerative reactions, and of any progress in the symptoms are all arguments against ascribing the symptoms to neuritis. He recognizes the possibility of pressure on the brachial plexus from connective-tissue changes, and of the influence of cold water or chemicals, but these factors are not of universal application. Central lesions are not to be thought of. It has no relations to any general neurosis, but it has some analogies with neuralgia.

The ætiology is obscure, but in many cases there is exposure to hot and cold, with sudden changes in temperature, and to injurious chemical influences; manual labor has little influence. Many cases occur about the climactic period, but the influence of that change is wholly unknown. In the diagnosis we must distinguish the condition from neuritis, tabes, Raynaud's disease and erythromelalgia. The treatment is not very efficacious. Drugs are of little use, except to relieve pain when present; electricity, warm baths and warm local applications may do some good, but the affection, although never giving rise to more serious consequences, is often very obstinate.

Friedmann⁶ considers the affection to be as independent and individual as neuralgia, yet similar paræsthesia is sometimes seen as a symptom of more serious affections, such as tabes. In itself, however, it is harmless, although annoying and persistent. He divides the affection into temporary and intermittent forms, acute, subacute and chronic, the transitory forms being usually limited to one extremity, possibly extending to other parts, and being often subject to exacerbations. In women the menstrual period often has an influence in increasing the severity of the paræsthesia. The acute form is the commonest, and the prognosis is usually very good. The average case usually lasts either a few days or weeks, or else months or years; intermediate, sub-acute forms seem to be rare. The more persistent forms vary in severity at different times in the day; the paræsthesia is apt to be worse at the beginning of the night, or on waking in the morning. In cases of short duration there may be recurrences, yet they are less common, but there are chronic forms where there are remissions of several months. Friedmann has also seen cases with a different distribution, sometimes involving the region of a single nerve. In cases of simple paræsthesia, without severe symptoms or anæsthesia, Friedmann is disposed to ascribe the trouble to general anæmia, with a weak circulation, and he thinks there is often some cardiac affection, especially a slight amount of fatty degeneration of the heart. General neurasthenia seems of little importance. When cold is an ætiological factor there is often pain, with a burning, swollen feeling, and objective disturbances of sensibility. Friedmann puts

in a third group of cases which begin suddenly, are often unilateral and are associated with vertigo and occasionally are followed by slight paresis, but these cases are probably due to focal lesions in the brain. A fourth class of cases are often accompanied with pain, either in the affected parts or elsewhere, and occur in persons with a strong tendency to rheumatic troubles. These cases are allied to cases of neuralgia and neuritis, where the pain is slight but where there is obstinate and severe paræsthesia and burning. The severe chronic forms are seen usually in women at the period of the menopause. Friedmann is disposed to refer the trouble to two pathological conditions—passive hyperæmia of the extremities, and irritation of the peripheral end branches of the nerves. Acroparæsthesia is a typical mild functional neurosis of the sensory nerves of the extremities. In treatment electricity holds the first place, and tonics and cardiac stimulants are often indicated.

Laquer,⁶ basing his experience of eighteen cases, in women between thirty-five and forty, recognizes the picture described by Schultze, and notes the absence of anæsthesia, nerve-tenderness, motor disturbances, electrical changes, muscular atrophy and cutaneous changes, and he also has not observed the pallor of the hands, nor any angio-spastic conditions. In several of his cases he has noted a previous history of severe labors with profuse hæmorrhages. The distress and burning often became so severe at night as to render sleep difficult. Menstrual disturbances and the menopause were not considered as causal factors. The influence of hard work with the hands seems to Laquer to be of great importance. He is disposed to regard the affection as an exhaustive neurosis.

The subject cannot be abandoned without a brief reference to the paper by Collins⁷ in a recent number of this JOURNAL, in which he holds that the trouble is due to defective innervation in the blood-vessels which causes a low degree of blood-pressure and lack of proper blood-supply to the terminal branches of the peripheral sensorial nerves.

ACROMEGALY.

Claus and Van der Schicht⁸ report an autopsy on a case of acromegaly made two or three hours after death. They were therefore able to obtain the tissues in a fresh state, which enabled them to elicit certain new facts. The lymphatic ganglions of the neck had undergone profound modifications. Their structure had become uniform, and they no longer contained lymphoid follicles. All varieties of white corpuscles were found: those with a single nucleus, with a polymorphous nucleus, and with multiple nuclei, even megacaryocytes and polycaryocytes. The muscular tissue of the neck was sclerosed and atrophied; the nuclei had many budding processes, and the sarcoplasm had undergone a vascular and fatty-granular degeneration. The glandular tubes of the hypophysis of the patient, an old man, were filled with principal and chromophilous cells, both rich in fatty granulations. As intermediate forms existed, it seemed probable that one variety engendered the other. The hypertrophied and acromegalic pituitary gland was necrosed and its constituent parts were liquefied. The parts which had escaped this destruction were formed by a lymphoid

⁶ Neurologisches Centralblatt, 15 March, 1893.

⁷ See this Journal, cxxix, 264. 14 September, 1893.

⁸ Annales et Bulletin de la Société de médecine de Gand, Nos. 71 and 72, 1893.

⁶ Deutsche Zeitschrift für Nervenheilkunde, iv, 450, 1893.

tissue analogous to that of the lymphatic ganglions of the neck. Several megacaryocytes and polycaryocytes were also found. There was no trace of the primitive glandular tissue. The organ was poor in blood-vessels, and its degeneration and necrosis was attributed to insufficient nutrition. The thyroid gland showed both atrophy and glandular hypertrophy, and hypertrophy of the connective-tissue structure with lymphoid infiltration. The liver showed fatty degeneration and atrophy of the glandular elements, with a slight lymphoid infiltration in the interlobular connective tissue. There was chronic parenchymatous and interstitial nephritis. There was hyperplasia of the splenic pulp and the follicles of Malpighi. The enlargement of the tongue was due to connective-tissue hyperplasia.

DISEASES OF THE CAUDA EQUINA.

Komayer⁹ has collected twenty-six cases of disease affecting the cauda equina, on which he bases an account of the symptomatology. The affections have the double character of diseases of the peripheral nerves and diseases of the cord. Its resistance and its greater mobility protect the cauda from more frequent lesions, and, furthermore, the lumbar vertebræ are more resistant than the dorsal or cervical. One of the constant symptoms of lesions of the cauda is a disturbance in the functions of the bladder and rectum. There is also more or less paralysis of the lower extremities, the paralyzed muscles rapidly losing their electrical excitability and becoming atrophied. There are very severe pains and paræsthesia. In all cases the sensibility in certain regions is diminished or lost, and the reflexes may disappear. Vaso-motor and trophic disturbances are also noted. The causes of disease of the cauda are traumatism, tumors, and syphilitic, tubercular and inflammatory processes, and the course varies according to the cause. Traumatic lesions are apt to be due to hæmorrhage into the spinal canal. Sometimes there may be hæmorrhage into the canal or the cord and spinal roots, without any lesion of the vertebræ. The symptoms depend upon the seat of the lesion. Ordinarily in traumatic cases, the muscles of the posterior part of the thigh are paralyzed. In meningeal hæmorrhage the course is more benign. Death is often due to purulent infection (bed-sores) or ascending nephritis. Seven out of thirteen cases died within ten weeks, the others made a relative recovery. Paralysis of the bladder, and anæsthesia resist treatment. Lesions of the conus medullaris cannot be distinguished from lesions of the sacral roots. If there has been no injury the disease develops insidiously, and is almost always attended with pain and paræsthesia. The pain is intolerable and is situated in the lumbar and sacral region, extending to the legs. Vesical and rectal symptoms follow, but paralysis of these organs is not so complete as in traumatic cases. In both forms there is impotence. The anæsthesia is also somewhat characteristic. It involves the genitals, the perineum and the posterior parts of the buttocks and thighs. In traumatic cases the conus is more apt to be affected; in idiopathic cases the pain and the greater sensibility of the vertebral column indicate an affection of the nerve roots. The most hope in treatment is from surgical interference.

ACCORDING to a police census, there are nearly four thousand doctors' signs in New York City.

⁹ Les maladies de la queue de cheval, Prague, 1893.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, November 6, 1893, DR. CHARLES P. PUTNAM in the chair.

DR. J. W. FARLOW read a paper on

HYPERTROPHY IN THE POST-NASAL SPACE, ESPECIALLY AFTER CHILDHOOD.¹

DR. SPRAGUE: I think this is a very important subject. Post-nasal hypertrophies are without doubt the cause of many troubles. As Dr. Farlow has said it is almost a daily occurrence in the clinic to find these cases where the patients have never complained of any nasal obstruction, and in fact almost deny that there is any trouble there. It is surprising how small an amount of hypertrophy will cause a great deal of trouble. I think that the vast majority of cases of deafness, and hypertrophic condition of the middle ear, are due to primary trouble in the naso-pharynx. I remember one case where there were adhesions from the anterior portion of the orifice of the Eustachian tube stretching backward to the posterior pharyngeal wall, so that the tube was almost entirely occluded and thereby backing up the mucous into the middle-ear and causing a great deal of trouble in that direction, finally resulting in mastoid inflammation and requiring operation.

DR. A. COOLIDGE, JR.: Dr. Farlow has covered the ground very thoroughly and very well. I have noticed many of the things of which he has spoken, and agree with him that these hypertrophies are often the unsuspected cause of different symptoms. In addition to the evil results of these hypertrophies, I have noticed in several cases a marked atrophy of the adjacent mucous membrane, and of the mucous membrane lower in the pharynx, apparently as a result, a condition which has been noted by Dr. Delavan in the recent Pan-American Congress. There is no doubt that the adenoid hypertrophies of children sometimes do not atrophy, or only very slowly when persons have attained their full growth; but I think that we can hardly say that this is the rule. The number of children who have more or less of this tissue is very large. In young adults the percentage is not nearly so large. I agree with Dr. Farlow that after the removal of part of these growths, in adults, the remainder often remains apparently the same size for a long time; and I agree with him as to the necessity of thorough removal. Unless the amount of growth is large it may not obstruct nasal respiration; but, as Dr. Farlow has shown, this is only one of the numerous evil results of their presence. In reference to diagnosis, in a full-grown person an unusually long finger is required to reach to the vault, if the person is not etherized. It is very difficult to judge of the amount of hypertrophy with insufficient light. By far the best view of this region I have got by sunlight. In using sunlight it is better to have a flat head mirror, one that does not focus the rays. If such is not at hand an ordinary head mirror may be used, but care must be taken not to focus upon the patient's uvula, which may burn the patient's palate. It is sometimes possible, with cocaine, to thoroughly remove the growths in a few sittings,

¹ See page 56 of the Journal.

without much discomfort, but in many patients the naso-pharynx is too sensitive to make this practicable. A long etherization is often a good deal of an undertaking. I have on many occasions been able to operate very satisfactorily by primary etherization. Everything is ready at hand before beginning the ether; the patient sits in a chair in a position to be operated on; the operator also sits in position. The patient is then told to breathe as rapidly as possible from a sponge well soaked with ether. After breathing in this way for from three-quarters of a minute to a minute, the sponge is removed, a gag immediately put in, and the naso-pharynx cleared with a Gottstein curette and the finger-nail. This gives about from half a minute to a minute of anæsthesia. In two minutes after beginning the ether, the patient has sufficiently recovered to understand directions given him, and in two or three minutes more he is ready to go home. No pain has been felt, and there is never any vomiting. It is not always possible to induce the patient to breathe rapidly enough for this method of etherization, but in many cases of older children or adults, it is very satisfactory, provided that all that is necessary can be done in the short time. In advocating this method of anæsthesia I do not mean to say that I prefer such an operation to the careful removal of all traces of hypertrophy. The latter is the more complete method of treatment and produces better results, but it implies a longer etherization with its attendant discomforts. If after beginning this short operation it is evident that it is impossible to do satisfactory work in the time, it is always possible to prolong the ether.

DR. JACK: The connection between the ear and naso-pharynx is a very important one. Ear diseases are perhaps as largely influenced by the post-nares as by causes operating through the auditory canal. The pharyngeal tonsil probably operates as much if not more than any other one thing in causing middle-ear inflammation. The air is cut off from the air cavity by swelling around the Eustachian tube, or by a piece of growth obstructing the mouth of the tube, producing a collapsed drumhead with possibly fluid accumulations, a condition with which you are familiar.

I am in the habit in my work of paying especial attention to the posterior part of the nose, and try to obtain as free breathing through the nose as possible. Childhood is the time to arrest any tendency to ear trouble. From the attention given to adenoids it seems probable that the number of cases in adults will grow less as time goes on. It has been my custom in removing this growth in young adults to operate under cocaine. The success of this method depends largely upon the patient's self-control. It is better in some cases to do the thing thoroughly in one operation under ether. In children an anæsthetic is absolutely necessary, for the growth should be entirely removed to prevent recurrence. The vegetations may reappear after apparent removal, although it is known to be a rare exception to the rule. The Gottstein curette is useful in removing loose ends left by the forceps, but is not as effective in sinking into the base of the tonsil. Careful attention should be paid to the neighborhood of the Eustachian tubes. The growths are usually soft here, and the finger furnishes a safe and satisfactory substitute for the forceps. Profound anæsthesia is not necessary or safe. Hæmorrhage, as we know, is often copious, and threatens to invade the larynx.

Important as is the position of the head in cleaning the throat of clots, of still greater importance is the action of the larynx in case blood tries to enter it. One early experience with this accident, which fortunately, as I was able to remove the clot, did not result seriously, has made me very careful not to give ether to complete anæsthesia of the throat.

DR. COBB: I have very little to add. I have seen Dr. Coolidge do these operations under primary anæsthesia, and it seems to me a very excellent method. With regard to the forceps in operating without ether, there is a great deal of difficulty on account of the contraction of the soft palate and the danger of wounding it with the post-nasal forceps, even in exercising great care; and I think for that reason in certain cases that the Gottstein curette is preferable. With regard to the diagnosis of these growths simply by the post-nasal mirror, it is not always satisfactory, because the mirror pointing somewhat forwards and upwards instead of backwards, one does not get as satisfactory a knowledge of the posterior wall as he does if he examines with the finger; and often when the naso-pharynx has looked comparatively clean, the finger feels considerable growth on the posterior wall of the vault not shown by the mirror. Therefore, I think both methods practised together are much more satisfactory than reliance on either one of them. The tendency of these adenoids to recur is, I think, interesting in cases where one feels quite sure that one has eliminated them; for even when after examination with the posterior nasal-mirror and with the finger one finds that they are practically gone, one will some years afterwards see signs of them, and I do not believe it is entirely due to lack of radical operation. I think there is certainly a fair chance that adenoids have recurred in these cases. Dr. Jack spoke of a case in which he suspected that he had not operated thoroughly. I think that may have been one of these cases.

DR. H. F. VICKERY: I should like to say that a fatal case of secondary hæmorrhage is reported in the November number of the *American Journal of Medical Sciences*. The operator was called to the little boy just in time to see him die. He makes some valuable remarks on the care which should be exercised.

DR. M. H. RICHARDSON: I have seen this operation performed many times by the specialist in diseases of the throat and nose. Personally I have had no experience whatever with the procedure, this operation being so much out of the field of general surgery. I was glad to hear what Dr. Coolidge said about the dangers of complete anæsthesia; and on this subject I should like to say a word. We are too confident in the use of ether. We feel much safer in giving it than we ought; not as regards its physiological action, but the methods of administration. Whatever dangers there are in the use of ether lie in the latter consideration. It is to the most inexperienced person present that we intrust this most important function. This fault is not peculiar to those presumably the least familiar with the subject; it is the practice of every hospital to have its junior men give the anæsthetic. This practice is open to criticism, it seems to me, not only because it increases unnecessarily the inherent dangers of etherization, but because it may disconcert the operator, and at times embarrass him even more than the operation itself. Whenever possible, therefore, anæsthesia should be at least supervised by an

experienced man. At times, of course, the nurse, or even one of the family, must be intrusted with the ether. I think all operators will agree, however, that the anxieties incident to the operation are much increased at such times.

The first operations I ever saw on adenoids were among the bloodiest in my experience; the hæmorrhage in excisions of the upper jaw does not exceed that occasionally seen in the removal of adenoids. Moreover, in the former operation the head can be put forward and the blood allowed to run out; while in the latter there is nothing to prevent the blood from running directly from the posterior nares into the larynx. It seems to me, therefore, that the only safe plan is either to have the anæsthesia so light that the patient can himself keep his pharynx clear of blood, or to adopt some position, like that of Rose, in which the blood by gravitation leaves the air-passages free.

DR. COOLIDGE: In regard to getting blood into the larynx and trachea, if the patient is profoundly etherized, the danger is great; but I think if lightly etherized, it is not great, provided the person is not cyanotic. If there is anything in the pharynx, cyanosis, with or without ether, is dangerous; for instance, in opening a retro-pharyngeal abscess we sometimes hear that there is danger of drawing the pus into the lungs. I believe that the danger is slight, provided the child is not cyanotic. In operations in the throat it is sometimes tempting to complete a proceeding in spite of the fact that the patient has begun to get blue. Most patients will swallow anything in the pharynx unless they are either profoundly etherized or cyanotic. Occasionally a case is met with, which from the start acts badly. The reflexes do not seem to be quite right. In such cases it is necessary to proceed with extra caution.

DR. DE BLOIS: There is an operation with the head thrown back over a block or pillow, in which case the posterior nares would be filled with blood before any could escape into the larynx. Dr. Major, of Montreal, always operates in this way. In cases of retro-pharyngeal abscess which I have frequently opened, I invariably turned the patient upside down just as soon as I have dropped the knife. In cases where I operate on adults I take them by the hair and push their heads down on the floor, because as soon as you cut into the abscess the rush of pus is more than can ordinarily be cleared even if there is no anæsthesia. There is a great deal of the pus, and it comes with a gush. I never have operated on a retro-pharyngeal abscess under ether. I think they should always be opened without ether, because you should have what assistance the patient can give to keep himself from asphyxia.

DR. SPRAGUE: I was very much interested in the suggestion of primary anæsthesia. About a week ago I had a patient in whom I tried primary anæsthesia. I asked the etherizer to get along with as little ether as possible. As soon as the patient was under primary anæsthesia I had her set up, and operated immediately. I cleared out the vault of the pharynx with the forceps, and the fossa of Rosenmüller with my finger. By the time the patient began to struggle she began to clear the throat, and everything was over. I do not know how long it was. It was not more than three minutes perhaps. I think that ordinarily too much ether is given.

DR. FARLOW: With regard to the use of anæsthetics, ether or cocaine, I spoke of them with reference to adults. Many people, especially young ladies, have a great dread of ether, and prefer to have the growth removed under cocaine, even if there is some pain, unless the amount to be removed is large. I am glad to hear what Dr. Richardson has said about the danger of anæsthesia in these cases. I think the anæsthesia should be very light, and great attention paid to the amount of blood lost. It is important to look after the respiration and the pulse. I have seen patients go into a state of collapse even when the anæsthesia was light and the amount of blood lost inconsiderable. I have seen one case of secondary hæmorrhage. It was in a young man, twenty-five years old, from whom I had removed considerable hypertrophied tissue on several occasions without much bleeding. One afternoon I removed several large pieces with forceps, and thirty-six hours later he had a hæmorrhage which lasted several hours.

I think the mirror by all means the best aid to diagnosis, though the finger often gives valuable information as regards the depth of the growth.

With regard to cases becoming less numerous in the future, this is probably true; but I also think that there will continue to be a great many cases where the hearing is involved, where there is cough and a considerable amount of secretion trickling down from the post-nasal space, keeping the nose and pharynx in an hypertrophied condition—cases which may not have caused any great disturbance in childhood, but which, instead of atrophying at puberty, have persisted and even grown larger, requiring treatment in later life.

SPECIMEN OF GANGRENOUS AND PERFORATED APPENDIX.

DR. M. H. RICHARDSON: This specimen is a very beautiful one. The case is one of extreme interest. It is the third case of appendicitis that I have operated on within the last two weeks where the diagnosis was very difficult indeed—in spite of what has been said as to the ease with which the diagnosis of appendicitis can generally be made.

In the first case Dr. F. C. Shattuck, on the second day after admission, made a correct diagnosis of appendicitis where every one else was wrong. I had made a correct diagnosis of it the first day, and had advised immediate interference, but yielded to the advice of all who saw the case that day—all the more willingly because the type was one almost invariably fatal in my hands; and I was glad to be supported in the plan of waiting, for I wanted to see if any different result would follow the let-alone policy. The next day I changed my mind as to diagnosis, and thought it was not appendicitis. I was influenced partly by the absence of leucocytosis, reported by Dr. Richard Cabot; for this condition had been present in every case of suspected suppuration in which an examination of the blood had been made. Death followed operation in a few hours.

In the next case, seen about two weeks ago, all the symptoms were in the region of the liver, and the appendix was found there. The extravasation had extended up between the liver and the ribs and around the foramen of Winslow. I have no doubt it would have resulted in a large subphrenic abscess.

The third case was exactly like the second. The

patient, a boy of eleven, was taken five or six days ago. The operation was done on the fifth or sixth day — I may say the fatal fifth or sixth. The fourth, fifth, and sixth are the fatal days, and the mortality on these days is frightful. Death results, of course, from the general peritoneal infection. The reason why operations performed on the eighth, ninth, tenth, eleventh days, or later, are more successful lies in the "survival of the fittest" — the general infections have all been fatal, and patients with localized abscesses only survive. This young boy of eleven was taken with vomiting and diarrhoea about a week ago. They sent for Dr. Atwood, of Haverhill, on Saturday, to-day being Monday. I saw the case this morning and found the boy with pain over the liver, and sensitiveness especially marked over the hepatic flexure of the colon. Dulness extended from the crest of the ilium into the lungs. The right lung was flat all over its lower half; respiration 40, temperature 102°, pulse 160. On going through the flank with a long incision I came down on the walled-off ascending colon with the appendix situated externally to it at that point. There was a sero-purulent effusion running up between the liver and the ribs and over the kidney, and as far as I could see to the foramen of Winslow. That the diagnosis of appendicitis is correct, is shown in this specimen by the perforation at the tip, with a small faecal concretion under it. I tied off the appendix, drained and packed with gauze. I have no doubt that there is an infection of the pleural cavity and a pleurisy or some lung trouble dependent on direct contagion. The prognosis is very grave, even from the appendix; and with the trouble in the lungs it seems very severe.²

In appendicitis I do not believe that the peritonitis is often caused by these operations. The infection already exists. Two cases of general infection are apparently precisely alike; the treatment is the same in each; one gets well and the other dies. The reason why one dies and the other gets well must generally be found in the nature of the poison. In one case of general infection we get pure cultures of the bacillus coli communis; in another we do not. In a third we get nothing, or very mild micro-organisms. We are going to find, in the bacteriological elements, the explanation for the prognosis of these cases. Since the first of May I know of at least twenty deaths from appendicitis in this community. You cannot say that they were all due to surgical interference, because many of them were beyond surgical aid, and no operation whatever could be done. From my own experience I can say that the diagnosis in many cases is very difficult indeed; and as to the prognosis, you cannot tell anything about it. Some cases get well where you think there is no chance of recovery, and some you think very favorable, die.

BAPTISM BY BRANDT'S METHOD. — Baptism by immersion was performed in an unusual manner in a Pennsylvania town not long ago. A patient too ill to leave his room was desirous of baptism. A large portable tub was filled with water at the bedside. The man was lowered into it on a sheet quite in the Brandt manner, and the ceremony successfully performed.

² December 14, 1893. These two cases recovered. The last had an empyema on the right side, which Dr. Atwood opened. The abdominal wound closed rapidly. From the appendix Dr. McColton obtained pure cultures of the bacillus coli communis. The infection of the pleural cavity was probably from this microbe, though no cultures were made.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED Meeting, December 18, 1892, the President, Dr. S. B. W. McLEOD, in the chair.

A paper by Dr. T. GAILLARD THOMAS on

THE IMMEDIATE CAUSATION OF THE DISEASES PECULIAR TO WOMEN,

was read by Dr. C. C. Carmalt, Dr. Thomas being unavoidably prevented from being present. There were, he said, four great climacteric periods in the life of the female in connection with which the great bulk of the diseases in question occurred. It could be safely stated that eight-tenths of them took their rise from these climacterics. The first of these was puberty, marked by the development of ovarian activity; the second, marriage; the third, child-bearing; and the fourth, the menopause, marked by retrograde processes in the ovaries.

It was with the ovaries, and not the uterus, that the woman advanced and retrogressed; the activity in the uterus being entirely dependent on the former. The changes in the ovaries constituted the phenomenon, and those in the uterus the epi-phenomenon. During the first two-thirds of the period between birth and the age of puberty the ovaries, uterus and annexa remained almost entirely undeveloped. During the last third, they gradually increased in size, and just before the girl reached puberty developed with amazing rapidity. If, when the time of puberty came the appropriate changes had not taken place, if the uterus had not properly grown or had become misplaced, if the ovaries remained undeveloped, or the Fallopian tubes were impervious, diseased conditions would inevitably arise. If ovarian abnormalities existed, the most serious consequences would result, and the young woman might perhaps become the victim of hystero-epilepsy. If the tubes had become strictured, dysmenorrhoea would be the consequence.

The First Climacteric was a period to be watched with the greatest anxiety. On the first of the month the girl might be blooming and in the full tide of health, on the 15th of the same month she might suffer in a way that would indicate to the experienced physician that she was to be a chronic invalid. A system of appropriate treatment for the existing dysmenorrhoea and other symptoms might be instituted, but if the normal changes had not taken place in the ovaries and tubes, every means would be exhausted in vain, and eventually it would be necessary to perform the humane and entirely justifiable operation of removing the ovaries and tubes.

The Second Climacteric. — After passing the time of puberty in safety the young girl would live in health and happiness up to her second climacteric, marriage, unless she was unfortunate enough to take cold during a menstrual period or suffered from other accidental illness. As a result of marriage she was liable to encounter new ills, the three principal of which were vaginismus, gonorrhoeal infection from specific urethritis in her husband, and abortion. In speaking of the second of these Dr. Thomas quoted from an address of his which he had delivered upon a former occasion. Until twenty years ago, he said, specific urethritis was but lightly thought of. It was to Dr. Emil Neoggerath, formerly of New York, that the profession was indebted for its present knowledge of the enormous importance of this affection as a factor in the etiology

of the diseases of women. He had shown conclusively that behind the strictures in the male urethra produced by gonorrhœa, which were so extremely common, the germs of the disease were liable to linger, and that they were capable, even after a long time, of transmitting gonorrhœal infection to the female, with the most disastrous results. Among the troubles to which it gave rise were oöphoritis, pyo-salpinx, and peritonitis, which were always serious, and might result in death. For a time the assertions of Noeggerath were assailed with bitterness and met with ridicule; but they are now universally recognized as true.

In his (Dr. Thomas's) opinion, specific vaginitis was one of the most frequent and active of all the causes of the diseases of women. Its effects are often simply appalling, and left us nothing as a last resort but the operation of oeliotomy, which might of itself prove fatal to the patient under the circumstances. How common it was for an unsuspecting young man of nineteen to slip from virtue. A few years afterward when he had married, still suffering from a low grade of chronic urethritis, he would give all that he possessed if he could undo the terrible results of that early indiscretion. It was, therefore, highly important that every intended bridegroom should be instructed by his physician as to the necessity of a clean bill of health before entering the marriage state. The existence of the gonococcus should be carefully looked for, and a marital quarantine was as necessary as a quarantine for the ordinary contagious diseases.

The Third Climacteric.—Even in normal labors child-bearing was liable to be followed by serious results. Thus, comparatively slight lacerations of the cervix uteri or of the perineum might give rise to the most untoward consequences. In ordinary conditions of the system such lacerations of the tissues would be but a trivial matter, but in the puerperal state it was to be remembered that there were two circumstances which rendered them of grave significance. In the first place, from the moment of the fixation of the ovum after conception there was a rapid development of all the pelvic organs. Secondly, wounds made in the genital canal was bathed, after the birth of the child, by the lochia, made up of cervical and vaginal epithelium, blood and mucous corpuscles, bits of decidua, and, at times, shreds of membranes and of the placenta. Under favorable circumstances the discharge in contact with the abraded surfaces would set up either a sapræmia or septicæmia, with their attendant evils. When it had become the general practice to carefully examine patients at the time of delivery, and to at once repair any injuries that might have been suffered during labor, the diseases of women would be less numerous than they are at present and gynecologists would have fewer operations to perform.

The Fourth Climacteric.—When we considered the far-reaching nervous influences which attended the process of ovulation, it was not to be wondered at that the cessation of this at the menopause should be accompanied with marked changes. While, however, the importance of the menopause as an etiological factor was admitted, it could not be doubted that too much significance had often been assigned to this. Not infrequently there are other causes of disease, which, occurring at this period, were improperly referred to the menopause. Care should therefore be taken to avoid an over-estimate of its importance and at the same time an under-estimate which might lead us to

postpone necessary operations. Having referred to some of the changes incident to the menopause and its effect upon uterine fibroids and other abnormal conditions, he mentioned vaginitis and especially hæmorrhagic vaginitis and procidentia of the uterus as affections liable to be met with at this period.

DR. GEORGE T. HARRISON dwelt upon the extreme importance of gonorrhœa as a factor in the production of the diseases of women. Perimetritis, endometritis and peritonitis were the common result of latent gonorrhœa in the female, as first pointed out by Dr. Noeggerath, and it was with rare prevision that the latter asserted his conviction that this affection was of microbic origin. It was reserved for Neisser to fully establish the existence of the gonorrhœal germ, and the gonococcus was now as universally recognized as the bacillus of tuberculosis. The diagnosis of acute gonorrhœa was an easy matter. It was in the chronic form of the disease that mistakes were made, and the real cause of many cases of oöphoritis and other serious troubles was thus often overlooked. But, if carefully studied, the clinical features would be found to be characteristic. In speaking of the later infections due to gonorrhœa, he said that salpingitis was rare. Peritonitis due to this cause, was fortunately confined to the pelvic peritoneum, as no ptomaines were generated by the gonococci. From his experience he believed that syphilis was an innocent disease in the female in comparison with gonorrhœa. In this connection he related the case of a young married lady who was attacked with metrorrhagia and violent uterine pain, accompanied with a high temperature; an examination showing the presence of endometritis, salpingitis and peri-oöphoritis. She was placed upon appropriate treatment, and began to improve, when suddenly violent gonorrhœal ophthalmia developed, and, notwithstanding the best efforts of two eminent eye-specialists and the most careful nursing and attention, she lost the sight of one eye entirely, and the other was only saved with difficulty.

We constantly saw young men entering on marriage with bright hopes of offspring, only to see them blasted. Sterility was the almost constant result of this chronic gonorrhœa, and women affected with it were liable to protracted ill health. Hysteria was frequently associated with their sterility.

DR. H. J. BOLDT said that while the principal causes of the diseases of women were given in the paper, there were a few points which had not been touched upon. Among the etiological factors were dress and the neglect of hygiene. High-heeled shoes had long been a potent cause of trouble by placing the pelvis in a bad position. Personally he believed that the agency of gonorrhœal infection had been exaggerated, and that the puerperal state (including abortions) was responsible for more ailments than this. Still, we should not underestimate this factor. It was not the acute form, but the chronic which gave so much trouble. In the acute stages of the disease we could, as a rule, cure the patient completely. In the chronic there was apt to be an atrophic form of parametritis, with only slight thickening of the broad ligaments.

Another point to be considered was, what amount of trouble is produced by uncalled-for gynecological interference. He had known pessaries, unadvisedly employed, to produce intense pelvic irritation, and related a case in point. A patient took cold and suffered from pelvic pain. Her physician diagnosed malposi-

tion of the uterus and introduced a pessary, and this had the effect of setting up metritis and double salpingitis. Yet when he (Dr. Boldt) made an examination he found that the uterus was not out of place at all. In other cases he had known the treatment for dysmenorrhœa by dilatation, divulsion, etc., to result in metritis, salpingitis and ovaritis. In all such procedures it was necessary that the patient should be fully prepared beforehand, and he looked upon the simple introduction of the uterine sound as as much of an operation as larger operations. In any case presenting itself it was important to decide whether the patient should be treated at all, and it was without doubt a fact that hundreds of women suffer from unjustifiable interference.

The suppurative diseases of the generative organs were more frequent causes of trouble than gonorrhœal infection. It was, however, impossible to make a differential diagnosis between gonorrhœal and non-gonorrhœal conditions, and we could only surmise that women were suffering from specific trouble who remained sterile for a number of years, (without any other assignable reason,) and had constant pelvic disorder. In all cases where there was sterility without an evident physiological cause he claimed that no treatment should be undertaken for this condition until a microscopical examination of the semen of the husband had been made for the presence of spermatozoa. Exposure to cold during menstruation was, of course, a generally recognized cause of disease in women.

DR. A. H. GORLET said that one common cause of trouble was neglected dysmenorrhœa previous to married life, and it was one that was very apt to be overlooked. He related an illustrative case and then called attention to an association which he had noticed between fibroids of the uterus in married women with dysmenorrhœa during maidenhood. Having referred to neglect of proper care of the bowels as a potent cause of pelvic disease, he spoke of abnormal obliquities of the pelvis produced by faulty positions, in assumed attitudes, certain occupations, etc., as another common cause. He also mentioned tight-lacing and improper suspension of the clothing, and to improper interference of the physician, said he would add improperly executed uterine operations. In all such procedures we should use as much care to secure perfect cleanliness as in operations in the peritoneal cavity, and that we should have as much respect for the uterine cavity as for the peritoneal.

DR. E. E. TULL said that deformities of the pelvic organs were found in a considerable proportion of cases where the individual had received all proper care during early life and was in all other respects perfectly healthy. This was usually, though not always, to be explained as the result of scarlet fever or some other exanthematous disease occurring at the age of 12 or 13. In some cases pelvic disease was due to syphilis, and in one case of oöphoritis where he had removed one of the ovaries, he found gummata in the organ. The patient was at once placed upon anti-syphilitic treatment, and was thus saved from another operation, for the removal of the second ovary. Gonorrhœa he believed to be the most potent cause of pelvic inflammations, although it was very difficult to make a positive diagnosis from the fact that it was rare to find a man who had never suffered from gonorrhœa. Another frequent cause of trouble was neglect of proper cleanliness of the genital organs, and the accu-

mulation of foreign matters in these parts, he believed, often resulted in a mild septicæmia. To this should be added lack of proper cleanliness after childbirth. As to displacements of the unimpregnated uterus, he believed that they were of no importance whatever from an etiological point of view, and that it was a mistake to suppose that they gave rise to any trouble.

DR. BOLDT having asked whether Dr. Tull meant to say that he favored the use of the douche after childbirth, the latter replied that he would not recommend the douche as a uterine treatment. After the third or fourth day he believed it to be of value, but he would not employ it immediately after delivery on account of the danger of introducing infectious material into the uterus.

DR. HARRISON said that he wished to go on record as protesting most earnestly against the practice of vaginal irrigation after childbirth. After normal parturition the vaginal canal and uterus were entirely free from septic material, and said he had the authority of the greatest of all obstetricians, Credé, for this statement. Personally he had performed all manner of obstetrical operations, and neither before or after them did he employ the douche. All that he required was that the operator and everything that came in contact with the woman's parts should be aseptic. Septic hands and instruments were a common cause of puerperal infection. Dr. Harrison said he also differed with Dr. Tull in regard to the importance of uterine displacements. He believed that retroversion was always pathological and a cause of trouble, and that it should be rectified.

DR. ROBERT MURRAY spoke of the practice that had prevailed of late years at the Maternity on Blackwell's Island, where he is one of the attending accoucheurs. The same care as regards cleanliness was used in all cases of labor there, as surgeons were in the habit of employing in laparotomy. At the beginning of labor and just after the birth of the child a creoline douche was employed, and at all other times an antiseptic occlusion-pad (in which a bichloride of mercury solution, 1 to 4,000, was employed), was kept closely applied to the vulva. The results were equal to those of any other maternity hospital in the world. From October, 1890, to October, 1893, there were 957 cases of labor, with not a single death. In 110 of these the forceps were applied at the middle strait or the outlet, in 12 at the superior strait, before the head had engaged at all, in 28, version was performed, in 8, craniotomy, in 1, Cæsarian section, and in 2, symphysectomy. Dr. Murray believed that the great cause of disease in married women, was the bad treatment of childbirth and miscarriage. After the latter they were especially apt to act imprudently. In unmarried women (setting aside the effect of tumors), he thought the great cause of trouble was the lack of knowledge as to how to take care of themselves during the menstrual period.

DOCTORS' BILLS AS DEBTS OF HONOR. — Doctors' bills are said to be classed as debts of honor in Austria, China and Sweden. They are left, as gambling debts are here, so far as the law is concerned, to be paid or not, according to the inclination of those incurring them. This way may not, however, be entirely a disadvantage, because it is well known that such obligations are frequently paid where legal debts could not be collected.

Recent Literature.

The Physician's Visiting List for 1894. (Lindsay and Blakiston's). Philadelphia: P. Blakiston, Son & Co. 1898.

This conveniently arranged visiting-list is now in the forty-third year of its publication, and deserves the continued success which it has met. The various tables upon doses, poisons and antidotes, disinfectants, diseases of the eye, asphyxia, examination of the urine and utero-gestation are well arranged for reference.

A Syllabus of Lectures on the Practice of Surgery. By N. SENN, M.D., Ph.D., LL.D., Professor of Surgery, Rush Medical College, etc. Philadelphia: W. B. Saunders. 1894.

The title describes accurately this volume, which is compact, of convenient size, and contains 211 pages. It is clearly and concisely written. Its contents are arranged in tabular form, with broken lines and separated headings, so that a particular affection is readily found. It is a syllabus in the true sense of the word. The work is arranged in conformity with "The American Text-Book of Surgery," and whenever the text was deficient, the writer has added facts and names of authors and operation. It is practically an index, and a very good one.

Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By CHARLES W. CATHCART, Conservator, Fellow of the College. Vol. I. The Skeleton and Organs of Motion. Edinburgh: James Thin. 1893.

The Museum of the Royal College of Surgeons of Edinburgh dates from the end of the last century. The former printed catalogue was published in 1836; but as it contained only the specimens illustrating pathology, the present catalogue is in no way a continuation of the old, but rather a new and more systematic arrangement of the collection. The labor involved in new classification must have been great; but Mr. Cathcart has given the college a catalogue which is far more than a list of specimens. It is a book which has a value in itself, and which is made readable, even to the stranger, by the short clinical notes added to the cases.

Clinical Gynecology. Being a Hand-Book of Diseases peculiar to Women. By THOMAS MORE MADDEN, M.D., F.R.C.S., Ed., etc. With 259 illustrations. Philadelphia: J. B. Lippincott Co.

This work embodies forty-seven lectures, which contain the results of the author's teaching, extending over a quarter of a century. They have been thoroughly revised and put into form for publication, and the result is on the whole very satisfactory.

It covers the whole range of gynecological subjects, and even includes the diseases and abnormalities of pregnancy, which, with the exception of ectopic gestation, are not usually treated in a work of this kind.

The general tone of the work is conservative and safe, perhaps too much so for our American ideas, inasmuch as he rejects entirely various operative procedures which have proved their usefulness and their right to be employed in suitable cases. For instance, he does not recommend the employment of the Alexander operation, and utterly rejects ventro-fixation

as a cure for obstinate and adherent retro-displacements.

The book, taken as a whole, is interesting and instructive reading. The illustrations are not quite up to the standard of the latest works on gynecology, and some of them have outlived their usefulness.

A Dictionary of Medical Science. Containing a Full Explanation of the Various Subjects and Terms of Anatomy, Physiology, Medical Chemistry, Pharmacy, Pharmacology, Therapeutics, Medicine, Hygiene, Dietetics, Pathology, Bacteriology, Surgery, Ophthalmology, Otology, Laryngology, Dermatology, Gynecology, Obstetrics, Pediatrics, Medical Jurisprudence, Dentistry, etc. By ROBLEY DUNGLISON, M.D., LL.D. Twenty-first Edition, thoroughly revised and greatly enlarged, with the Pronunciation, Accentuation, and Derivation of the Terms, by RICHARD J. DUNGLISON, A.M., M.D. Philadelphia: Lea Brothers & Co. 1893.

This Dictionary needs no introduction to the medical public. The former editions were the standard medical dictionary for many years. The last was issued in 1874. Since that time, and especially within the last ten years, a number of rivals of greater or less pretension have laid claim to public favor.

With the great progress and many changes in medicine and the allied sciences during that time, a new edition was much needed, and we are glad it has been supplied. Forty-four thousand new subjects and terms are contained in this edition. The volume is enlarged; but by rigid condensation and the omission of obsolete matter the dictionary is still kept within the limits of one volume—a large volume it is true, but not unwieldy or inconvenient for consultation.

The title-page gives the scope of the work and the aim of the editor, which have been faithfully and judiciously executed. Without entering into detailed criticism, and admitting frankly at once that any such work must necessarily exhibit some errors and some omissions, we do not hesitate to recommend this old friend in a new form as once again admirably adapted for every working medical library.

Sciatica: A Record of Clinical Observations on the Causes, Nature, and Treatment of Sixty-eight Cases. By A. SYMONS ECCLES, M.B., Aberd. Small 8vo; pp. viii, 88. London: Macmillan & Co. 1893.

This little monograph, which was originally published in the *Practitioner*, states nothing that is new with reference to the cause or the nature of sciatica. Based on a limited number of cases, the author states a few well-known facts, but he has omitted to give the results of more thorough recent observations,—much of the work is devoted to the treatment. He commends rest, warmth, massage and electricity, swinging the leg in a Salter's swing, and swathing it in flannel. He commends ironing the leg with a hot flat-iron electrode. The book is clearly and pleasantly written.

DR. KENT, in the *Glasgow Medical Journal*, says: "I would make the degree in Arts compulsory upon all candidates for the degree of Medicine and Surgery, and I undertake to say that not one medical graduate of five years' standing out of a hundred would, upon looking back, consider the time spent over his Arts course had been wasted."

THE BOSTON
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THURSDAY, JANUARY 18, 1894.

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REPORT OF THE MASSACHUSETTS STATE
BOARD OF LUNACY AND CHARITY.

THE State Board of Lunacy and Charity, in its Report for the year 1893, makes five recommendations for legislation:

- (1) A separate hospital for epileptics.
- (2) The appointment of medical examiners in lunacy by local judges, as in New York.
- (3) Six months' residence in the State as a prerequisite to a commitment to a State hospital for the insane, in order to avoid having insane persons brought here from other States for the sake of being committed to our hospitals.
- (4) Authority to transfer insane patients from the hospital for dipsomaniacs and inebriates to one of the hospitals for the insane without new commitment papers.
- (5) A medical registrar for each of the hospitals for the insane, whose duty it shall be to keep the hospital records, which are now quite imperfect.

The Massachusetts law provides for the ordinary commitment of an insane person to a hospital for the insane by the judge upon the sworn certificates of two physicians, each of whom is a graduate of some legally organized medical school, and has practised three years in the State, and neither of whom is connected with any hospital or other establishment for treatment of the insane, emergency cases being committed by the judge within five days after the patient is placed in the hospital, with the least possible delay, and under proper restrictions to prevent abuse. There is no penalty if unqualified physicians sign certificates, or if judges accept their certificates without sufficient scrutiny of their qualifications. On the whole, our law has worked reasonably well in all respects and remarkably well in most respects, although certificates of insanity are sometimes valueless by reason of their meagreness and incompleteness, as happens under all laws and in all countries, England and Scotland even included. In November last, a patient was received at one of the State hospitals, committed in due form

by the judge, but upon the certificates of two "doctors" possessing diplomas of a bogus medical college, in violation of the statutes. The patient was discharged as not insane two days later, after a brief examination of the evidence as to his insanity, although it is only fair to say that in court his insanity was testified to by one of the leading experts on insanity in the State. In commenting on this case, the Board says:

"In New York, any judge of a Court of Record may qualify a physician properly recommended as an examiner in lunacy, and give him a certificate to that effect, and no mittimus can be signed by a physician not a qualified examiner in lunacy. This would seem to be an excellent provision in lunacy laws, and the Board recommends its adoption in this State."

It is not difficult for a respectable general practitioner in New York to get his certificate, which is simply an official declaration of the qualifications required by the Massachusetts law, except in its limitation as to being connected with any institution for treating the insane; and the question of the insanity of the patients committed, there as here, "must of necessity fall to the superintendent of the hospital to which they are committed," especially in some doubtful or difficult cases, where "judges of courts of record appear to be going farther than the actual requirements would seem to justify. If this tendency continues in any marked degree, it will be necessary to have such cases determined by the courts."¹

The New York law also has its difficulties, and experts are by no means agreed that it is in any way better than ours, except that it would be a great gain if our Central Board should provide uniform and complete blank certificates for commitment, and if their use should be required in all cases, as is the law in New York. Our law is so liberal and flexible that many fear that the effect of calling the attention of the legislature to it would be to make it worse than it now is, as has been twice unanimously voted by the councillors of the Massachusetts Medical Society.

The Board urges the necessity of frequent inspection—in fact, of a supervision at night as constant as that by day—and of some appropriate way by which patients can be inspected in their rooms at night without being disturbed. Certain established rules of precaution are seemingly more uniformly followed in other States than they are in Massachusetts, where the institutions for the insane show a wide difference in the manner in which night-supervision is conducted.

The law concerning commitments to the Westborough Insane Hospital permits those desiring homœopathic treatment to be sent there at their own or their friends' request. When patients are sent from Suffolk County to Westborough, those desiring other treatment than homœopathic have no option in this matter. There are disadvantages connected with this liberality of method.

The Board recommends laboratories for scientific

¹ Fourth Annual Report of the New York State Commission in Lunacy, Albany, 1893, pp. 246 and 247.

research, medical-improvement clubs and training-schools for nurses in all hospitals for the insane, and suggests that all patients be photographed upon admission, as is done at the Westborough Hospital, by which means escaping dangerous patients might be identified. Occupation is advised so far as it is practicable to employ the patients, and "something more than a long-existing routine treatment, into which it is easy to lapse, may properly be looked for in Massachusetts hospitals."

Of the hospital for dipsomaniacs and inebriates, the Board disapproves of too much lenity and consideration, and an indulgent parole system for drunkards, suggests enforced labor and discipline, and condemns the looseness of many of the commitments, by which "an accumulation of inmates of disorderly and criminal habits and tendencies imperil the success of the humane venture of the State in its effort to treat habitual inebriety of itself by just and rational methods."

A striking case is cited by the Board, which illustrates the possibility of gross abuse in the face of laws prepared with the greatest care for the protection of the insane and hospital management second to none in the world in its solicitude for the welfare of its patients.

A private patient who had been in the McLean Asylum twenty-seven years, legally committed and detained, with the late Dr. Isaac Ray as one of his certifying physicians, seventy-five years old, demented and subject to convulsions which were increasing in frequency, was summarily removed by a deputy sheriff with a writ of *habeas corpus* and placed in the hands of strangers in one of our large hotels, his old attendant and his guardian being denied access to him. On the fourth day he was returned to the asylum, the judge deciding that his commitment was legal. On the following day the judge passed a further order, setting out that it was conceded that — was not of sound mind, and that he was properly in the custody of the asylum; and after reciting that it now only "remained for the court to inquire whether it is best for said — to be further kept and cared for at said hospital, or in some other manner," appointing a guardian *ad litem*, "charged to care for his interest in this investigation, and particularly to inquire in such manner as to him shall seem best, and to report to the court at such time as he may find it convenient, whether it is best for said — to be cared for in the said hospital, or in some other manner, and if in some other manner to report to the court some scheme for his care." The guardian *ad litem*, after a careful investigation, lasting more than two months, reported to the court that Mr. — had better remain in the hospital; and a final decree was entered, dismissing the original petition, and remanding Mr. — to the custody of the hospital. In the ultimate result, therefore, it may be said that no wrong has been done, either to the hospital or to the patient confined there; but the whole proceedings have been so extraordinary, and so inconsistent with the carefully-guarded provi-

sions of our statutes relating to the insane, and to the powers and duties of the judicial and other officers of the Commonwealth as to such persons, that the case should receive a more extended consideration.

With the evidence which we have given in the two cases mentioned and in the quotation from the report of the New York Commissioners, it may be doubted whether the medical profession would be ready to give to all judges the discretionary power of appointing permanently such examiners in insanity as they might see fit to appoint.

THE MICROBE OF SCARLATINA.

DESPITE the progress of bacteriology, the pathogenic microbe of scarlet fever still remains undetermined, unless, in fact, the views enunciated by Bergé at a late meeting of the Société de Biologie (December 10, 1893) should find acceptance. He states that it is useless any longer to search for a new microbe as the cause of this disease, and that scarlatina is primarily a local disease, with secondary infections (the eruption, etc.) due to the formation and absorption of toxins; the pathogenic agent is the streptococcus pyogenes, the microbe of erysipelas, of puerperal septicæmia, etc. In common or tonsillar scarlatina, the streptococcus finds a rich culture field in the crypts of the tonsil and there secretes (in all probability) "an erythematogenous toxin," whose diffusion throughout the organism produces the cutaneous or mucous eruption.

Bergé remarks that the tonsillar affection takes precedence in order of time, and that while the microscope invariably reveals the presence of the streptococcus in the tonsillar crypts, bacteriologists have never found microbes in the cutaneous exanthem, even by the recent methods of research formulated by Nicole.

Puerperal and traumatic scarlatina results from the local streptococcus-infection of the uterine (or other) wound, exception being made of morbid coincidences and of cases of tonsillar scarlatina which may be met with in the course of certain epidemics of puerperal fever, and are sufficiently explained by the existence of the common infectious agent, the streptococcus. It is admitted, moreover, that there may be scarlatina without eruption, characterized exclusively by the angina.

The principal arguments on which this writer bases his conclusions may be summed up as follows: (1) the succession of the eruption to the tonsillitis in common scarlatina; (2) the fact that careful observers have never found the tonsillar affection absent, even in certain rare cases where its presence was overlooked and denied (the so-called *scarlatina sine angina*); (3) the existence of a scarlet fever, really without amygdalitis, of uterine or traumatic origin; (4) the existence of a scarlatina without eruption in which the streptococcus-tonsillitis and its complications constituted alone the disease; (5) the constancy of the streptococcus in the tonsils of scarlatinous patients; (6) the streptococcic nature of the complications of scarla-

tina; (7) the relations of scarlet fever to the puerperal infection; and, lastly, the ready demonstration of the "erythematogenous" property of the streptococcus (pyæmic eruptions, infectious erythema of bucco-pharyngeal origin, etc.).

These conclusions are also corroborated by the study of the clinical comparison between the acute amygdalitis (generally due to the streptococcus) and scarlatina (contagiousness, the same duration of the incubation, the same possible complications, similarity of the febrile cycle, the same symptomatology, save the eruptions, etc.).

The diffusion of the infectious agent is no argument against the view advanced; we know only in part its modalities and its divers pathogenic actions. The non-recurrence of the disease can be affirmed only in respect to the eruption; the tonsillar affection may return again and again with the same violence.

It can hardly be said that M. Bergé's theory, which we have endeavored to state above, explains anything more than the complications and sequelæ of scarlet fever in connection with which a variety of common microbes, and in particular the streptococcus, have been found; it does not sufficiently explain the specific eruption, nor can it be said that this is identical with the erythema of puerperal infection. It will now be in order for M. Bergé to isolate the specific "erythematogenous" toxine, and show that it is produced by some "modality" of the streptococcus; then his chain of evidence will be complete.

MEDICAL NOTES.

PROFESSOR SENN'S GIFT TO CHICAGO.—Prof. Nicholas Senn has given his entire collection of medical books to the Newberry Library of Chicago. A large part of this collection was once the library of Prof. William Baum, of Göttingen. Dr. Senn retains only his working library; all the others are now at the use of the medical profession of Chicago. The money value of the collection is estimated at fifty thousand dollars.

A FOUR-YEARS' COURSE AT JEFFERSON MEDICAL COLLEGE.—At a meeting of the Faculty of Jefferson Medical College held on January 8, 1894, it was unanimously resolved to institute a compulsory four-year course with the session 1895-96. This step was taken in order that the large clinical service of the Jefferson College Hospital (350 cases a day) might be utilized to the fullest extent in carrying out the desire of the Faculty to provide advanced medical education of a practical character.

THE CAMERON PRIZE.—Mr. Victor Horsley has been given the Cameron Prize of the University of Edinburgh for the last year. The prize consists of the income from a sum of £2,000, and is given annually "to the practitioner or member of the medical profession who shall be adjudged to have made the most valuable addition to practical therapeutics during

the year preceding; and in determining the word 'therapeutics' shall be taken in its widest sense as including every agent or agency capable of influencing the human body in the maintenance or improvement of health, avoidance or cure of disease, or the alleviation of suffering."

THE ROME MEDICAL CONGRESS.—The International Medical Congress at Rome will have no lack of papers. Already a thousand articles have been given a place upon the programme. Up to the middle of December there were nearly four thousand names registered of persons intending to be present to listen to the one thousand papers.

AN INTERESTING JENNER RELIC.—The prevalence of small-pox in England, and the insufficient protection of the people by vaccination was a fitting time for the discovery of an interesting relic of Edward Jenner not long ago. At a sale of unredeemed pledges at a London pawnbroker's, there was purchased the casket in which the freedom of the city of London was presented to Jenner on the 11th of August, 1803, for "his skill and perseverance in the discovery of, and bringing into general use, the vaccine inoculation."

BOSTON AND NEW ENGLAND.

SMALL-POX IN BOSTON.—During the week ending at noon, Wednesday, January 17th, there were two deaths from small-pox in Boston. No new cases were reported. There are now eleven patients in the hospital on Canterbury Street.

SMALL-POX IN LOWELL.—There was another death from small-pox in Lowell, Mass., this week, making the third death from the disease this year.

DEATH AT AN ADVANCED AGE.—Mr. Edward Ryan, the oldest resident of Newton, Mass., died January 11th, aged nearly one hundred and ten years. He was the father of sixteen children; the oldest one now alive, being the third of the sixteen, is seventy-one years old.

A GIFT TO THE PORTSMOUTH HOSPITAL.—Mr. George Bilbruck has given the trustees of the Cottage Hospital at Portsmouth, N. H., ten thousand dollars for a new hospital building fund.

INFLUENZA IN PITTSBURG, N. H.—A severe epidemic of influenza is prevalent at Pittsburg, N. H., nearly the whole adult population being ill. There have been twelve deaths in this and the neighboring town within the last few days.

AN ESCAPE FROM AN INSANE ASYLUM.—Two inmates of the State asylum for the insane at Cranston, R. I., made their escape last week after smothering the keeper with a blanket and locking him in an empty room. After the keeper was rescued he was discharged for neglect of duty.

VACCINATION: A STUDY IN BLACK AND WHITE.—A physician in Boston who has been vaccinating the employees of some of the large hotels, reports that he was able to vaccinate forty-eight white persons an hour, but only thirty-eight negroes in the same time. As all

the other conditions were the same, the greater thickness of the black man's skin suggested itself as the explanation.

NEW YORK.

THE GOVERNOR'S ANNUAL MESSAGE.—The annual message of the Governor, submitted to the Legislature January 2d, contains considerable matter of interest to the medical profession. In regard to the preservation of the Adirondack forests, the Governor says: "The year just ended has marked a new era in the State in the matter of forest preservation. A new policy has been established, whose good results are already far beyond expectation." During the year a large extent of territory, valued at a million dollars, was added to the State Preserves, not only without expense to the State, but with an actual profit in money sufficient to pay the expenses of the bureau. Such a demonstration of the immediate money advantage of the tax-payer from preserving forest land, to say nothing of the climatic, meteorological and æsthetic gain, ought to be an incentive to the people of other States to continue such good work.

PUBLIC HEALTH.—On the subject of the public health the Governor says: "The spread of cholera in Western Europe last spring called for extra work on the part of the State Board of Health to prepare for the reception of the disease, should invasion take place. Local boards of health throughout the State are required to report upon the sanitary condition of their municipalities, and as to what arrangements had been made to care for cases of cholera, if any came. In order to assure active and efficient work, six inspectors were appointed by the State Board to visit all places of entry into the State, and such other places as would be exposed, reporting the needs for further sanitation, erection of hospitals, disinfecting stations or such like matters of importance to the public health. The wisdom of this work has been well shown in greater energy on the part of local health authorities; and while it is a matter of congratulation that cholera did not reach this side of the Atlantic, had it done so, the readiness in which the most exposed places were put was an assurance that an extended epidemic would have been prevented. The precautions at the Quarantine Station in New York Harbor were equally vigilant and thorough."

CARE OF THE INSANE.—Much space is devoted in the message to the matter of State care of the insane. In regard to this the Governor says, in part: "One of the inevitable results of the new system of State care was that the Central State Board should be endowed with reasonably broad powers of supervision and regulation. It was inevitable also that the creation of such a central board with broad powers should lead to more or less conflict between it and the local boards of managers which were established for each hospital, and whose official life, in most cases, considerably antedated that of the State Commission. That conflict was quite marked and spirited immedi-

ately after the adoption of the State Care Act, but subsequently subsided after the courts had upheld the powers assumed by the Commission. It has arisen again, however, within the last two months, and there seems to exist to-day anything but a cordial feeling of co-operation between the State Commission in Lunacy and the local boards of hospital managers. . . . I have endeavored, by bringing local managers together with the State Commissioners, to ascertain where the causes for grievances lay, and to bring about their correction so far as the administration of the law was at fault. These conferences have disproven many published allegations, and I am confident that as soon as the new system is fully understood it will prove satisfactory to the people. At the same time, the existence of the local boards of managers will serve a useful purpose in checking any arbitrary tendencies on the part of the State Commission. Certainly, in carrying on so noble a State charity, there should be no unnecessary friction among public officers. Neither personal nor political considerations should find any place in the discharge of this official obligation. For this reason, we should not only establish sufficient safeguards around the administration of the law, but encourage harmonious enforcement of its provisions by administrative officers."

TUBERCULOSIS IN CATTLE.—This subject is thus spoken of: "The examination of cattle for tuberculosis has been steadily pushed. In all, since January 1, 1893, 19,001 head have been examined, and 618 killed to prevent the spread of the disease. Microscopical and bacteriological examinations have been made of milk and specimens made *post-mortem*, showing the presence of the tuberculosis germ in all. Care is exercised in the examinations, and careful records are kept. The result will be, if work in this direction is continued, to improve the cattle in the State, enhance the dairy interest, and add a further protection to the public health by removing this source of disease germs."

A DISLOCATED AND FRACTURED NECK.—There is at present at the Gouverneur Hospital, a lad nine years of age, who was knocked down by a truck on January 10th, and suffered a dislocation and fracture of the cervical vertebræ. The dislocation was set, and the patient placed in a plaster-of-Paris dressing. As the fracture was slight and the spinal-cord apparently uninjured, he seems to be in a fair way of recovery. Since the apparatus was applied he has been gradually improving. His mind is perfectly intelligent and there is no paralysis of motion; but he does not articulate very well, and his respiration is somewhat labored and irregular.

DR. STODDARD'S APPOINTMENT TO THE STATE BOARD OF CHARITIES.—Governor Flower has nominated Dr. Enoch V. Stoddard, of Rochester, as a member of the State Board of Charities, to fill the vacancy caused by the death of Mr. Oscar Craig, and the nomination has been confirmed by the Senate. Dr. Stoddard was born in Connecticut in 1840, and was gradu-

ated from Trinity College. For two years he was at the Yale Medical School, and then completed his studies at the Albany Medical College, from which he received the degree of M.D. in 1868. In the same year he was commissioned a surgeon of volunteers by Governor Seymour, and went to the front with the 65th New York Regiment. Immediately after the close of the war Dr. Stoddard commenced the practice of his profession in Rochester, and for many years he has been on the staff of the City Hospital there. In 1873 he was appointed to the chair of Therapeutics and Hygiene in the Buffalo Medical College, and in 1892 was made Professor Emeritus.

Miscellany.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

A LETTER directed to Dr. A. Jacobi by the Secretary-General of the Eleventh International Medical Congress, and dated December 19, 1893, contains the following communications:

American members will pay on the English, French and Italian railways single fares for double journeys, and will obtain a reduction of twenty per cent. on fares for Italian round-trip tickets.

"The documents required for their identification will be sent to you in January, and Americans intending to visit the Congress will have to apply to you for them.

"Full particulars concerning the journeys will accompany the documents.

"Messrs. Thos. Cook & Son, London, Paris, Rome and Naples, should be applied to for accommodation and for tickets for the excursion at Rome, Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times*—for Naples, three days, including Vesuvius, Pompeii, Capri, Sorrento, Castellamare, Bajæ, etc.—for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

"The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc.—about 70 francs each, for the three days, and 285 francs for the ten days.

"Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey."

Only the North German Lloyd (22 Bowling Green) and the Compagnie Générale Transatlantique (3 Bowling Green) have thought fit to grant any reductions to Congressists.

FOOT-BALL VS. INSURANCE.

In a recent editorial in the *New York Medical Examiner*, Dr. G. W. Wells speaks of the bearing of foot-ball upon the insurance of a player. The subject of athletics is one which every insurance company considers in a very practical way. As underwriters,

they are obliged to look upon foot-ball as upon any other occupation; that is, in the light of danger to life or health, or as a cause of shortening the normal longevity of man.

There are in the game three classes of casualties: namely, those which are fatal, either immediately or shortly after; second, those from which recovery takes place sooner or later, with or without deformity; and third, those from which recovery never takes place, but ever after the victim carries with him results or reminders, either physical or mental, which place him in the category of chronic invalids.

If he is a policy-holder, and engages in this dangerous game, as now presented, he is putting his company to an extra hazard, for he is in immediate and constant danger of death; and his insurance may become a claim, by death, at any moment during the season.

In view of the many insidious and secondary affections resulting from foot-ball, of which he gives a most appalling list, Dr. Wells considers that a history of having played foot-ball should cause a more rigid scrutiny of the applicant for insurance by the examiner than in ordinary cases. In spite of this view that foot-ball and athletics are liable to render the applicant a questionable subject for insurance, we can but think that the members of our foot-ball and athletic teams are about as healthy and promising specimens of young manhood as are often seen, and that, save for social reasons, they stand in less need of insurance than any other class of men.

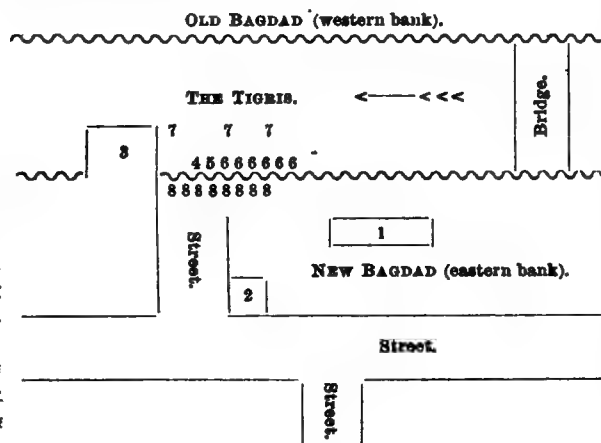
SELF-MUTILATION IN CHINA.

THE *Medical Press* gives the following account of a curious custom which only the ancestral worship of China could account for:

"The dearest hope known to an elderly Chinaman is to have descendants, and the main reason of this appears to be that when he comes to die his last days may be cheered by the conviction that he has left a goodly following of his own flesh and blood to worship, as the custom is in China, at his grave. But even the calculations of the "Heathen Chinee" are, in this respect, sometimes prone to be woefully thrown out of gear by a concatenation of circumstances, the occurrence of which could not have been foreseen. Of course, the Chinese father relies on his sons to propagate the race, and when there is only one son left upon whom this responsible duty devolves, it is obvious that much should be made of him. Facts go to show that sons are fully aware of the important position which in this particular they fill in the domestic circle, and consequently they expect and demand a full measure of consideration and regard from their male progenitors. Should it happen, however, that any serious quarrel arises between father and son, the son has it within his power to revenge himself to an extent which is absolutely unknown in more civilized communities. Probably no one but a Chinaman could understand the anguish of a Celestial father who suddenly learned one day that his only son had by one swoop of a razor relieved himself of his penis and testicles! But this is the mode of retaliation which aggrieved Chinese sons adopt towards fathers who offend them. Dr. Robert Coltman, of Peking, has just recorded two cases in which, for the reason mentioned, the sons made a clean sweep of their generative organs.

A SANITARY SERMON IN DIAGRAM.

DR. JOHN C. SUNDBERG, the United States Consul at Bagdad, has sent to the *Pacific Medical Journal* so telling a sketch of the sanitary condition of the water-supply of Bagdad that it is worthy of reproduction. It needs no comment.



1. United States Consulate. 2. Board of Health. 3. A house built out in the river, the wall of which stops dead cats and dogs, human faeces, etc., floating down. 4. Place where the water-carriers take the water which we have to drink. 5. Women and men washing clothes, rugs, etc., stained with cholera dejecta. 6. A row of men defecating in the water and washing their ani, also urinating. 7. Dead buffaloes, horses, dogs, cats, etc., floating down the river. 8. Water-carriers' donkeys always urinating and defecating while waiting for their loads.

PATHOLOGY AND THE SCIENTIFIC MIND.

In his introductory lecture at the Medical College for Women, Dr. William Russell¹ spoke of the development of our knowledge of pathology and the evolution of the scientific mind to its present ideal.

The most primitive idea of pathology was simple and spiritual enough. Disease and sickness were the work of evil spirits who, by the initiated, could be exorcised by charms and ceremonies. Prevention and exemption from disease might be sought for in a devil-worship. An advance upon this was the attributing of disease to a spirit, not normally evil, but beneficent; disease being the manifestation of his righteous anger, relief was sought not by propitiation but by sacrifice. The Hebrew idea was but a modification of this in the monotheistic belief of special revelation and punishment. The speculative character of the Greeks led to a different order of things, with them it became the province of philosophy to explain the ever visible phenomena of disease and death. There were hot, cold and moist hypotheses — doctrines of one cause. From this speculative chaos light arose when Hippocrates separated medicine from philosophy, and began crudely and falteringly to make medicine a science of observation instead of speculation. It was this that gave to him the fatherhood of modern medicine.

No material advance was possible until the structure of the body was followed and its various functions more or less defined. As knowledge of these was being acquired, as new facts were discovered, and new light was thrown upon the working of the complex animal organism, their bearing upon diseased processes

led necessarily to controversies and contentions, and there were solidistic and humoral schools of pathology, there were beliefs in spontaneous generations, in epidemic constitutions, and so on, all of them indicating and proof of the uncertainty of knowledge and its incompleteness. However, the bounds of reliable knowledge gradually extended. Following upon assured knowledge of normal structure came the recognition of abnormal structure in the various parts and organs of the body.

This progress has gone on till such "is the state of our certain knowledge of visible processes, that in the great preponderance of instances there is no room for differences of opinion amongst experts. Cases, however, remain in which from incomplete knowledge there is still room for differences of view as to the interpretation of appearances; as to appearances themselves there is practically none. But even here it is necessary for the truly scientific mind to candidly and frankly dissociate appearances and their interpretation. Interpretation is sometimes a matter of provisional judgment or opinion, and often must and ought to remain so until knowledge is so complete that doubt can no longer exist. And it is this candid open-mindedness which is, I take it, the ideal scientific spirit towards which we have all to work."

The aim of medical training is the development of a well balanced judicial mind upon assured knowledge and accurate observation. The unimpassioned search for truth is the highest conception.

Correspondence.

[Special Correspondence.]

LETTER FROM PRAGUE.

THE STUDY OF PATHOLOGY IN PRAGUE.

PRAGUE, December 17, 1893.

MR. EDITOR: — The conditions for the study of pathology are better here in Prague, so far as I can learn, than anywhere else in Europe. The number of autopsies is very large, and the material is well worked up from every point of view. Anatomy, histology, embryology and bacteriology enter constantly into the daily work, and my respect for each of these branches of medical science is rapidly increasing. The view of pathology taken is very broad, and the ideal taught by example is one not easy to attain. The study of pathology is centred in the Pathological Institute, a large building in the suburbs of the city on Krankehausgasse. In close proximity to it, on the same street, are the General Hospital, the Anatomical Institute and the Chemical Laboratory. The post-mortem examinations for most of the hospitals in the city are made at the Pathological Institute between the hours of eight and eleven in the forenoon. The *Secir-Halle*, or autopsy-hall, is a large room on the first floor, and is furnished with three marble autopsy-tables. On the same floor are three large rooms for the assistants, one for the demonstrators, a room for medico-legal autopsies, the lecture-room, a chapel, macerating-room, etc.

The present Professor of Pathology is Hans Chiari, who was called here from Vienna ten years ago. In his department are three assistants, two demonstrators and several volunteers. The autopsies at the Pathological Institute and at the hospitals are divided equally among the three assistants. Chiari makes only those autopsies which are of especial importance, and also what are called clinical autopsies. These latter are made by special request before a visiting physician or surgeon and his class in interesting cases, and they take place, as a rule, several times a week.

¹ Edinburgh Medical Journal, January, 1894.

By eleven o'clock the autopsy-room must be in perfect order, the bodies removed and the tables cleaned. Chiari first reviews the diagnoses of the previous day, corrects mistakes present, and adds any bacteriological or microscopical notes that may be ready. Then each assistant demonstrates the organs from the various autopsies which he has made, and Chiari advises, corrects, commends or reproves as necessity demands. All the diagnoses must be given in correct Latin. After the organs have been looked over and arranged for the demonstration, the two demonstrators show first the fresh tumors which have been received, and later slide-preparations of the tumors which have already been hardened; descriptions of the appearances are entered in the histological protocoll, and the reports of the completed cases are filled out for the surgeons. In the protocoll, opposite each tumor is entered the name of the demonstrator or special student who has taken it for examination, so that if a report lags the one to blame is easily traced. Every day in the week, from quarter-past twelve to one, a lecture on pathology is given in the lecture-room across the hall from the autopsy-room. As a lecturer Chiari is delightful; he speaks without notes, clearly, distinctly and rather rapidly; his subject is perfectly arranged in his own mind; and he never hesitates in the expression of his thoughts or for the lack of the appropriate word. His lectures are illustrated naturally and easily by numerous blackboard sketches and by many beautiful and appropriate specimens from the Pathological Museum. He calls his lectures *demonstrative lectures*. Immediately after the lecture comes the demonstration of the fresh pathological specimens in the autopsy-rooms, by Chiari at one table and by one or more of the assistants at the other tables. Three times a week an autopsy is made by students during the demonstration, under the supervision of an assistant. Microscopical sections illustrative of the subject of the lectures are also shown at the time by the demonstrators.

The medico-legal autopsies are made in a room adjoining the autopsy-hall by Professor Dittrich, until lately Chiari's chief assistant; and the material obtained is also used at the demonstrations.

The following table will show the number of autopsies made each year for the last seven years:

Year.	Pathological Institute.	Children's Hospital.	Other Hospitals.	Total.
1886	824	144	75	1,043
1887	790	152	68	1,010
1888	857	212	46	1,115
1889	773	186	44	1,003
1890	882	209	23	1,114
1891	843	175	102	1,120
1892	841	157	74	1,072

The Children's Hospital is but two blocks away, and has a large autopsy-room furnished with everything needful, as have also the other hospitals at which autopsies are made. Infectious diseases furnish a large part of the pathological material, and include small-pox, influenza, scarlet fever and diphtheria.

The room for pathological histology is on the second floor, over the autopsy-hall. The class meets twice a week from five to seven P. M., doing all work by lamplight, as it is the only spare time left in the day. A student can take the course only after having heard first the lectures on pathology. Six specimens are given the class each time; and towards the close of the exercise Chiari gives a talk concerning what they have been studying. Smoking is indulged in by every one during the exercise. The class usually numbers from forty to fifty men.

The lectures on pathology are heard by about one hundred men in the course of the year; and, in spite of six

lectures a week, the field of special pathology is never completely covered.

The Pathological Museum is in a large hall on the second floor, and contains over six thousand rare and valuable specimens, all carefully arranged and catalogued. On the same floor are the professor's private rooms, library, and also his home.

The assistants are also lodged in the Pathological Institute, and receive a salary of 600 guildens (\$240) a year. An effort is now on foot to increase the salary to 900 guildens. Internes in the hospitals receive the same remuneration.

The examination in pathology consists of two parts, practical and theoretical, and can be taken only after a student has attended the university for five years. Any time after that, when he thinks he is properly prepared, he can apply for his examination. Besides attending the lectures and the course in pathological histology, it is customary for each candidate for examination to take three or four weeks' drill under an assistant in performing autopsies and in examining microscopical specimens. The practical examination or *rigorosum* lasts about half an hour. I have attended several of them, and found them very instructive. Usually the candidates come in groups of two or three. One is requested to describe the external appearance of the body, and to make a part or even the whole of an autopsy, demonstrating the lesions found. Another removes the brain, and later is required to demonstrate part of the organs from another autopsy. Each man must do enough to show what he knows. Immediately after the examination of gross material each candidate is given a hardened pathological specimen, from which he cuts razor sections, stains, mounts and makes a diagnosis. On the same day, but usually at some later date, comes the theoretical examination, a fifteen minutes' quiz on a variety of subjects in pathology. The examinations are public, and the dean and one other official are usually present.

Besides the autopsies, the assistants have certain other duties portioned out to them: the first assists at the demonstration, and, with the second, has charge of the bacteriological department. The second assistant looks after the instruments and the museum preparations. The third has charge of the histological course, the protocolls and the microscopes. They are appointed from the demonstrators, two in number, who make microscopical preparations of the various tumors, etc., and have numerous other duties. The demonstrators are selected from the volunteers, of whom there are usually half-a-dozen in the laboratory, those having the preference who have worked in the anatomical or other laboratories. It will thus be seen that each assistant has worked up to his position, and is well trained in the various kinds of laboratory work.

The position of assistant in the Pathological Institute is greatly sought for, for the reason that it is a great stepping-stone to the position of interne in the hospitals. Here a clinical professor chooses his own interne, who not infrequently holds his position for two, four and even for ten years. The fact that the university and the hospitals are State institutions has certain great advantages. A clinical professor in the university receives a certain clinic in the hospital, which is henceforth known by his name; and his instruction is continuous, a matter of great importance to the student. The bodies of all who die in the hospitals come to autopsy, so that the pathological lesions in each case are known, and the diagnosis previously made is verified or corrected. At home, clinical instruction is interrupted by change of service, and autopsies are few, and rarely obtained in the most interesting and doubtful cases, over which, perhaps, much time and study have been spent.

A special student in any of the various branches of medicine could hardly find a better place for the study of the pathological side of his subject than in Prague. The number of autopsies is very large, and the material interesting and varied, for the reason that chronic tubercular cases are for the most part excluded. The museum contains not only many rare cases, but also the best specimens of all the more ordinary forms of disease. The number of

special students is constantly varying; at present there are three, of whom two are Russians. Chiari devotes considerable time nearly every day during the forenoon to his special students, who are taught to work in a systematic manner, and to make sketches and drawings with notes of their various preparations. His reception of strangers is most cordial; and he treats them all as fellow-workers with himself in the great field of pathology.

The bacteriological department is in two large rooms on the ground-floor, and is well fitted up with the necessary apparatus and with abundant culture media.

Briefly stated, the advantages for the study of pathology in Prague are the following:

The abundance and the variety of the pathological material, including all the acute infectious diseases.

A large museum stored with rare and valuable specimens from previous autopsies and from operations.

A large collection of histological material from various cases.

The personal supervision and instruction from the professor of pathology.

The concentration of the autopsies, bacteriological and microscopical work, museum, library and protocols within the same building, and all under the direction and immediate control of one person.

The perfect order and system preserved in every department, from the autopsy-room to the museum, and required of every person working in the laboratory.

Very truly yours,

F. B. MALLORY, M.D.

MODERN REALISM AND ZOLAISM IN SPANISH LITERATURE.

MR. EDITOR:—The following passages are *literal* translations from a modern Spanish society novel, and may be interesting from a medical point of view in that they show to what source the present school of writers of fiction in Spain is compelled to resort for matter interesting (?) to the general public:

"All, all had she suffered with resignation up to that moment; the auscultations, the palpations — which she considered shameful — of the accoucheur; the explorations to which she submitted her denuded body and enormous belly, in the lateral or dorsal decubitus, in order that this unknown man might examine the sides or fundus of the uterus — as he said — that he might profane her body! — as she felt assured; — the stethoscope constantly fixed upon her abdomen in order to perceive and count the fetal heart; the spiderlike tickling in the innermost parts of her belly, so persistent and annoying that it produced spasms, a species of incessant convulsions; the vomitings, the bulkiness, the monstrous tumefaction of the breasts, with pains so acute that they made her cry to heaven; the unwieldiness of her belly, rounded, fluctuating, convex, really incommensurable, which impeded the liberty of her movements; the insupportable tremblings of the fetus in its prison, at times more constant and brusque; the varicose and oedematous condition of her lower limbs and of her vulva, which made her think of death with pleasure; the vaginal granulations so profuse that they had made of her parts a deposit of pus rather than the external genitals of a woman; . . . the leucorrhoeal flow, abundant, viscid, trickling down her thighs, staining the sheets." . . .

"Rafaela was a case of rickets, or, better said, of osteomalacia; he knew, because it was plainly evident, that the primipara had no hips, that she must, consequently, have a narrow and deformed pelvis; and he knew, from a consideration of the preliminary phenomena of pregnancy, the suppression of the menses, the vomitings, the swelling of the breasts, the prominence of the nipples, the deep and accentuated coloration of the central areolæ and the increasing extension of the mottled areolæ, the evacuations of milk, the disappearance of the umbilical depression, the albumen in the urine, the vaginal granulations, the leucorrhoeal flow, and in general the whole symptomatology of pregnancy; he knew that failure to bring about abortion at a certain time, and the sooner the better, before the sixth month, condemned Rafaela to death." . . .

"She had stained the counterpane of the bed with green vomitus; and as her whole body was one convulsion, from head to foot, and the vomiting never ceased, that room was transformed by her into a sewer so full of viscidities of every sort that they almost reached to the doctor's ankles." . . .

"But the good doctor from the house of succor had reckoned without his host; the host in this case was Doctor Nieto, who by his delay in operating, by his citations, and his 'distinguo's' had caused the parturient grave injuries, such as beginning rupture of the uterus and of the bladder, inflammation of the peritoneum, and an adynamic and febrile state, very evident from the mental confusion of Rafaela. Moreover, the time which he had allowed to pass without performing the operation, and the force with which the fetal head had been compressing the parts below the straits and of the excavation, had produced in Rafaela violent contusions, which might be the origin of gangrene; and as a result of it, the formation of vesico-vaginal and utero-vaginal fistulae, of a separation of the symphysis pubis, and as a probable result of this, the determination of exhausting inflammations and suppurations and perchance as well of a great mobility of the articulations of the pelvis; . . . or what is the same, in clearer terms: of the impossibility to walk or stand." . . .

"He made use, this doctor, the saviour, with the dexterity acquired by the hand of a man who is guided by great conscientiousness, he made use, in order to accomplish his bloody operation, of a system which merits the term 'double'; a system made up of the series of operations which together receive in obstetrical science the name of craniotomy — perforation of the skull by means of Smellie's scissors; — extraction of the cerebral substance and crushing of the base of the skull by the cephalotribe — and of decollation by Lee's method; moreover he amputated the fetal arms, perforated the chest and abdomen, and, finally, introduced the blunt hook into the pelvis of Rafaela, making traction on it, once it was well fixed, with force sufficient to extract the distorted creature." . . .

What a delicate and beautiful picture of the process of pregnancy and parturition to place within the reach of the modern Spanish woman under the guise of a society novel!

Very truly yours,

J. W. COURTNEY, M.D.

ROXBURY, January 12th.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 6, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.	
New York . .	1,891,306	878	330	13.86	20.80	1.21	.56	8.28	
Chicago . .	1,438,000	—	—	—	—	—	—	—	
Philadelphia . .	1,115,562	613	188	8.48	22.56	.84	1.28	4.80	
Brooklyn . .	978,394	367	111	12.42	25.65	1.08	.37	8.57	
St. Louis . .	860,000	—	—	—	—	—	—	—	
Boston . .	447,397	277	78	8.64	26.64	1.44	.72	5.76	
Baltimore . .	500,000	—	—	—	—	—	—	—	
Washington . .	308,431	113	29	3.58	21.38	—	1.78	1.78	
Cincinnati . .	308,000	111	36	9.00	13.50	.90	2.70	4.40	
Cleveland . .	290,000	88	24	13.68	21.66	2.28	2.28	5.70	
Pittsburg . .	263,709	—	—	—	—	—	—	—	
Milwaukee . .	260,000	86	40	13.92	13.92	—	3.48	2.48	
Nashville . .	87,764	28	9	—	23.10	—	—	—	
Charleston . .	85,165	45	10	—	24.42	—	—	—	
Portland . .	40,000	22	4	—	27.90	—	—	—	
Worcester . .	96,217	87	6	2.70	32.40	—	—	—	
Fall River . .	87,411	40	16	15.00	22.00	—	—	—	
Lowell . .	87,191	29	12	20.70	10.35	—	3.45	3.45	
Cambridge . .	77,100	39	13	17.92	15.96	15.36	—	2.56	
Lynn . .	62,666	24	—	—	12.48	—	—	—	
Springfield . .	48,684	12	1	—	26.00	—	—	—	
Lawrence . .	48,365	—	—	—	—	—	—	—	
New Bedford . .	45,886	17	3	—	5.88	—	—	—	
Holyoke . .	41,278	—	—	—	—	—	—	—	
Salem . .	32,233	7	1	—	14.28	—	—	—	
Brookton . .	32,140	11	3	—	9.09	—	—	—	
Haverhill . .	31,396	12	—	—	16.66	—	—	—	
Chelsea . .	30,264	24	8	4.16	33.44	—	—	—	
Malden . .	29,394	12	1	—	33.33	—	—	—	
Newton . .	27,668	—	—	—	—	—	—	—	
Fitchburg . .	27,148	—	—	—	—	—	—	—	
Taunton . .	26,972	7	2	—	28.56	—	—	—	
Gloucester . .	26,688	5	0	—	—	—	—	—	
Waltham . .	22,068	10	1	10.00	30.00	—	10.00	—	
Quincy . .	19,642	6	1	—	33.33	—	—	—	
Pittsfield . .	18,802	6	0	—	—	—	—	—	
Everett . .	16,585	5	3	—	60.00	—	—	—	
Northampton . .	16,331	8	0	—	33.33	—	—	—	
Newburyport . .	14,073	3	1	66.66	—	—	33.33	33.33	
Amesbury . .	10,920	0	0	—	—	—	—	—	

Deaths reported 2,387: under five years of age 941; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 325,

acute lung diseases 665, consumption 344, diphtheria and croup 173, scarlet fever 35, typhoid fever 23, diarrhoeal diseases 24, measles 23, whooping-cough 22, cerebro-spinal meningitis 11, erysipelas 5, malarial fever 2, small-pox (New York) 2.

From diarrhoeal diseases New York, Philadelphia and Fall River 5 each, Brooklyn 4, Milwaukee and Lowell 2 each, Boston 1. From measles New York 13, Philadelphia, Brooklyn, Cleveland, Milwaukee and Fall River 1 each. From whooping-cough New York 9, Philadelphia 5, Milwaukee 3, Brooklyn 2, Boston, Cincinnati and Woburn 1 each. From cerebro-spinal meningitis New York 4, Lowell 2, Brooklyn, Cleveland, Worcester, Somerville and Chelsea 1 each. From erysipelas New York 3, Brooklyn and Cleveland 1 each. From malarial fever New York and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending December 23d, the death-rate was 24.7. Deaths reported 4,896: acute diseases of the respiratory organs (London) 635, whooping-cough 149, diphtheria 82, measles 81, fever 70, scarlet fever 63, diarrhoea 34, small-pox (Birmingham 4, West Ham 2, London and Liverpool 1 each) 8.

The death-rates ranged from 13.5 in Blackburn to 41.5 in Plymouth; Birmingham 26.8, Bradford 18.6, Bristol 33.6, Croydon 23.0, Hull 24.2, Leeds 17.5, Leicester 22.6, Liverpool 31.6, London 26.3, Manchester 22.8, Newcastle-on-Tyne 19.1, Nottingham 24.4, Sheffield 23.9, West Ham 19.3, Wolverhampton 35.3.

METEOROLOGICAL RECORD.

For the week ending January 6, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- ster.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...31	30.22	22	23	16	84	81	82	N.W.	W.	12	10	N.	C.	.08
M...1	30.34	26	28	18	85	84	74	W.	W.	14	6	C.	C.	
T...2	30.20	30	30	19	68	66	67	S.W.	S.W.	8	15	C.	C.	
W...3	29.97	38	38	31	78	73	80	S.W.	S.W.	10	13	F.	C.	
T...4	29.83	44	44	37	82	68	76	S.W.	S.W.	17	9	O.	C.	
F...5	29.90	42	42	36	73	91	82	S.W.	N.	12	8	O.	O.	.03
S...6	30.09	34	34	31	91	90	90	N.E.	E.	5	16	O.	N.	
☞	30.06		34	27			79							.12

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; W., snow. † Indicates trace of rainfall. ☞—Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 6, 1894, TO JANUARY 12, 1894.

The extension of leave of absence granted CAPTAIN CHARLES E. WOODRUFF, assistant surgeon, U. S. A., is further extended one month and twelve days.

Leave of absence for two months, on surgeon's certificate of disability, with permission to leave the Department of Dakota, is granted FIRST-LIEUT. CHARLES F. KIELLER, assistant surgeon, U. S. A.

FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Missouri, and will report in person to the commanding officer, Fort Assiniboine, Montana, for duty at that post.

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session at Washington, D. C., during April, 1894, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before March 15, 1894, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between twenty-two and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1894.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, January 24th, at 8 o'clock, by Dr. Edward Cowles. Subject, "Mental Physiology." Physicians are cordially invited.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, January 22, 1894, at 8 o'clock, P. M.

Dr. H. C. Baldwin: "Two Cases of Syphilitic Origin; Meningitis and Progressive Muscular Atrophy." Discussion by Drs. M. Prince, G. L. Walton and others.

Dr. F. W. Gosw: "Two Cases of Pulmonary Congestion and Oedema Occurring during Pregnancy." Discussion by Drs. E. Reynolds, C. M. Green and others.

Dr. E. G. Brackett: "The Use of Gymnastics in the Treatment of Lateral Curvature." Discussion opened by Dr. E. H. Bradford. Drs. E. M. Hartwell and C. Enebuske have been invited to be present and to take part in the discussion.

Members are kindly requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, on Wednesday evening, January 24, 1894, at 8 o'clock.

Dr. E. H. Stevens, of Cambridge, will read a paper on, "Twelve Cases of Obstetrical Septicemia Seen in Consultation." Discussion by Drs. W. T. Councilman, C. M. Green, M. H. Richardson and C. W. Townsend.

Dr. H. C. Baldwin: "Three Cases of Retroversion." EDWARD REYNOLDS, M.D., Chairman. GEO. H. WASHBURN, M.D., Secretary.

APPOINTMENTS.

The managers of the Boston Dispensary have made the following appointments: HORACE D. ARNOLD, M.D., assistant in the orthopedic department; JOSEPH C. STEDMAN, M.D., assistant in the department for diseases of the rectum and anus; and F. E. TOWNE, M.D., and FARRAR COBB, M.D., district physicians.

RECENT DEATH.

CHARLES GILMAN SMITH, M.D., died in Chicago, Ill., January 10th, aged sixty-five years. He graduated from Harvard College in the class of 1847 and from the medical school of the University of Pennsylvania in 1851.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Ophthalmological Society, Twenty-ninth Annual Meeting, New London, Conn., 1893. Hartford: Published by the Society. 1893.

Twenty-third Annual Report of the Bureau of Statistics of Labor, March, 1893. The Annual Statistics of Manufactures, 1892. Boston: Wright & Potter Printing Co., State Printers. 1893.

Essentials of Practice of Medicine. By Henry Morris, M.D. And an Appendix on Urine Examination. Illustrated. By Lawrence Wolff, M.D. Third edition, enlarged by some three hundred essential formulae, selected from eminent authorities. by Wm. M. Powell, M.D. Philadelphia: W. B. Saunders. 1894.

The Art of Living in Australia. By Philip E. Musket, Late Surgeon to the Sidney Hospital; Formerly Surgeon Superintendent to the New South Wales Government; Medical Superintendent, Quarantine Station, Sidney, and Senior Resident Medical Officer, Sidney Hospital. London, Edinburgh, Glasgow, Melbourne, Sidney and New York: Eyre & Spottiswoode, Her Majesty's Printers.

An American Text-book of Gynecology, Medical and Surgical, for the use of Students and Practitioners. By Henry T. Byford, M.D., John M. Baldy, M.D., Edwin Cragin, M.D., J. H. Etheridge, M.D., William Goodell, M.D., Howard A. Kelly, M.D., Florian Krug, M.D., E. E. Montgomery, M.D., William R. Fryer, M.D., George M. Tuttle, M.D. Edited by J. M. Baldy, M.D. With 360 illustrations in text and 37 colored and half-tone plates. Philadelphia: W. B. Saunders. 1894.

Lecture.

LECTURES ON SURGERY.¹

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XXIII.

HIP DISEASE. — POTT'S DISEASE.

YOU must conceive, of course, that these lectures are mere outlines; and when you see the large books that have been written upon these special deformities, and reflect how much the student has got to carry in order to learn all that is known on any given subject, it seems to be rather discouraging; but our business is merely to mass together certain facts, to draw outlines, so to speak, which you can fill in afterwards; and, therefore, if a great many details are omitted, you must expect that you can only get the principal things firmly fixed in your minds, and that is all that I attempt to do.

In speaking of hip disease, I said that the earlier symptoms of the disease were the slight limp, eversion of the foot, apparent elongation of the limb, and that, soon after, this gave place to more marked lameness, drawing in of the foot, evidently inversion of the limb with decided shortening, this marking the completed stage of the disease. In the earlier stage of the disease the diseased condition begins in the synovial sac, or it begins in the head of the bone. In one case it proceeds to the pulpy degeneration of the synovial membrane, ulcerating the cartilage and finally affecting the bone; and in the other case it starts as cheesy, tubercular deposit in the head of the femur, destroys the cartilage by its contact with the disease and the cutting off of its nutrition, invades the joint, converts it into an abscess, bursts through the joint, and finally ends in dislocation of the bone. The child, at first a little lame, now becomes a great deal more lame, and shrieks out with pain at night. After a period of great feverish excitement, a space of time follows in which there is entire relief, and the child seems better. This coincides with the bursting of the abscess through the capsule of the joint, getting rid of the tension and relieving the extreme symptoms of pain and fever. Subsequently to this inversion and shortening of the limb, another period of fever comes on, marked by the progress of the abscess into the cellular tissue, finally breaking through a small opening through the skin, and this again followed by a period of relief. The shortening and inversion which take place at this period are due to dislocation of the head of the femur, which occurs as perfectly on the dorsum of the ilium as if it were in consequence of violence. In other words, the ligaments have given way, the joint being disorganized, synovial sac ruptured, the head is pulled out from the socket, thrown out on the dorsum by the powerful action of the muscles, and shortening of one and a half to two and a half inches, with inversion of the limb, takes place.

Subsequently to this, nature pursues one or two courses, usually the latter. The first course would be to try to establish a new and false joint on a new part of the bone, the head resting on the dorsum. The other and more common termination is to establish

ankylosis — absolute bony ankylosis between the diseased and wasting head of the femur and the false socket, surrounded with osteophytic growths, on the dorsum of the ilium. This is the usual termination. The child who goes through all the stages of the disease from the first synovial inflammation ends with ankylosis, with the head of the femur against the dorsum of the ilium in the characteristic position of dislocation of the thigh upon the dorsum of the ilium. Sometimes, in fortunate cases, this is all the deformity that ensues; but in many other cases, on account of entire neglect of treatment in keeping the limb in the proper position while these changes are taking place, the patient yields to the natural impulse to relieve suffering by drawing up the leg. The leg, then, is not only shortened by the disease, but the knee is drawn up and shortened by the efforts of the patient. In addition to this, powerful adduction takes place, so that, in extreme cases, the deformity is great, the head of the femur being dislocated and the leg shortened, and the knee drawn up nearly in contact with the abdomen. These are the extreme cases of deformity which afterwards result in ankylosis, with a perfectly useless limb; the child walking with crutches upon one foot, and the other foot wasted, and carried high (in the air). This is the natural course of the disease if it pursues all its stages. It does not necessarily, however, pursue all these stages, for sometimes it becomes arrested in its progress, and then, in some very favorable cases, the disease may be made to stop short of dislocation, and in some cases, probably, stops short of real abscess; or if slight abscess exists, it does not become enough to burst the capsule, becomes inspissated and absorbed, and the child gets well. The head of the bone altered somewhat, but still inside the socket, and fastened by fibrous if not bony adhesions. That is in the mild cases.

Inasmuch as treatment, to be effectual to arrest the disease, must be applied at a very early stage, it becomes important to know what are the exact diagnostic signs of this disease when it is first beginning, for it is in the very early stages only that we can do much good.

Lameness, limping and pain moderately marked, usually concealed a good deal by the child. The hollow of the back is very peculiar. The child, laid down on a table, arches the back in such a way that the hand can be readily passed under the small of the back without touching the back. On examining such a child and comparing the two sides, it will be found that the first noticeable change is a loss in the sharp contour of the line of the groin which separates the femur from the abdomen and pelvis; and next to this a wasting of the glutæi muscles, due to disease, and a consequent loss of that sharp fold which marks the division of the lower edge of the glutæi from the posterior femoral group of muscles; in addition to this, an increased prominence of the greater trochanter of the femur. If now the two joints of this child are examined, first the hip of the well side and then of the diseased side, a marked difference will be found. In case of a healthy femur, we may take the femur and rotate it almost as freely as the humerus without eliciting any movement on the part of the child. The moment we touch a diseased limb we have a joint locked by the muscles, firmly held by muscular spasm set up at once by nature the moment we touch the limb in order to avert the chance of suffering from

¹ These are unwritten lectures printed from the stenographers' reports. Verbal corrections are made in revision, but no rhetorical changes. They were delivered to the third and fourth classes as part of the regular course.

moving the diseased joints upon each other; and although the child may go about with a moderate amount of motion in these cases, yet the suddenness and completeness with which nature will lock the joint when it is seized and attempted to be moved is a very significant fact. We find a limited motion. We find that the movement which we are making is moving the pelvis as well as the femur; that there is an ankylosis which is false, and which, under ether, is shown to be absolutely false, but which demonstrates the great difference between the diseased and the healthy side. I do not think that this muscular spasm and ankylosis is ever wanting in the well-marked case; and that, together with the loss of the fold in the groin, flattening of the nates, arching of the back and stiffness of the joint, are the very early diagnostic marks of the disease itself. Direct pain by pounding about the joint is not generally elicited, except in the advanced state. Grating or rubbing in the joint itself is almost never elicited unless the patient is not only etherized, but in a very advanced stage of the disease; and even then it is seldom got, for the reason that, although the cartilages give way, and you would think the bony surfaces would be brought in contact, yet nature has protected them with a bed of velvet-like granulations, which cover all the diseased surfaces, and prevent them from rubbing together with a crepitus like that of diseased bone. No motion can be got without ether, and with ether the signs of crepitus are not usually to be found. Of course, when abscess has taken place, when dislocation has taken place, we can hardly mistake the disease for anything else, provided we can eliminate any violent accident or injury, which might have caused the dislocation or the abscess from traumatic reasons.

Given a slow-coming-on disease with these phenomena, it means hip disease, and the child will present other signs of tuberculosis in its system, in its features, in its nails, in the eye-lashes, in the shape of the lip and a wasted condition, which speedily shows a state of chronic scrofulous disease. So much for the symptoms and the diagnosis. If nature is left alone in the favorable case, she produces a cure by ankylosis. If this disease has begun early enough in life, and runs on fast enough to complete its stages before the period of puberty is reached, a cure by ankylosis, with entire healing of the sinuses, and subsequently a strong limb, are frequently the result. If, on the other hand, the disease starts later in life, or does not conclude its three stages by the time puberty has come on, then usually the disease remains permanently; and although partial ankylosis may take place between the femur and the ilium, still sinuses are apt to occur, caries is apt to go on. The sinuses may heal and the patient go on a few years, and then, after some sudden exposure, it breaks out again from the old opening. There is a new discharge of pus, a new attack of pain, and new evidence of disease in the joint. This is especially the case in males after they have received a slight sprain or injury, or exposure to cold, if they have grown up with hip disease imperfectly cured; and, in females, it is quite liable to follow the condition of pregnancy, where, after childbirth, the diseased condition is again lighted up, abscesses reopen, and the old trouble about the joint asserts itself again.

As to the treatment we can employ. It must divide itself into a number of stages. The most effectual in the early stages; the less effectual mode of treatment

in the later stages. In the early stages, the moment these preliminary signs are detected, it is essential at once to obey the voice of nature, which teaches us by the muscular spasm that she is making every effort to keep the joint at absolute rest. That is the first and great essential of the treatment of hip disease. The patient should go to bed and keep still. The bed, with extension, is the first treatment of hip disease as soon as it is suspected; and this should be continued until the nightly cries and pain and such symptoms are gone. Frequently in these early cases six weeks in bed will suffice to overcome all the active inflammatory symptoms. The joint becomes almost like the other. The patient is apparently almost relieved; and when that appears, then we can venture to let them get out of bed, and not before. The moment they get out of bed they must be supported by another form of extension, by a splint; which can be applied in such a way that the patient walks on the perineum. I will not describe the apparatus used for this purpose. In addition to this it is of extreme usefulness to oblige the patient for a while to go on crutches; to put on a high shoe on the sound foot, which forces them to keep the sick foot up in the air. The child can get about in that way freely; with extension kept up, so that the diseased bones do not press and churn upon each other. This mode of treatment must be continued a number of months. When you are convinced that another stage of the cure has arrived, you can venture next to take off the high shoe; keep on the splint, and allow the patient still to go about on crutches, and put weight on the limb. Eventually crutches are discarded and the splint alone used; and finally, after a long while, several years, the patient may be trusted to go without anything; and, if fortunate, you may have succeeded in arresting the disease. All this treatment, provided the disease does not go on to abscess, can be continued without suffering, or interfering with the health of the child. Although we consider it bad policy to put one of these feeble children to bed and shut them away from good air; yet we have got to balance this against the rest and ease and absence of fever we shall produce by extending the limb and keeping the joint still; and the moment the early inflammatory stages are passed, the child can be got up and out of doors, and put in the healthiest possible circumstances. Tonics, of course, should be used to build up the child's health.

When abscess comes on before treatment, or in spite of treatment, extension is badly borne. When abscess is forming, and before it has burst the capsule; when it is reforming and trying to make its way into the cellular tissue; extension produces no relief; but produces terrible pain and has to be abandoned. In such a state we must content ourselves by allowing the patient to lie still in bed; apply soothing applications to the limb; wait for the giving way of the abscess at some point; and try to keep the limb down with a gentle splint into as good a position as we can while these inflammatory changes are taking place. When the abscess has burst, or is evacuated, extension can be again applied. Now is the time when nature is about to pull the bone out of the socket, and the time when extension, if kept up vigorously, may avert this; or diminish the extent to which nature will get the advantage of the bone and draw it up on the dorsum. In these cases where abscess has formed, where dislocation is bound to occur, extension in bed by weight

and pulley becomes of vastly more consequence than before. A good deal of weight should be put on; the parts held as still as possible; perhaps the child held down in bed by some brace or confinement; and if the child does well; if it does not suffer; if its constitution holds out; unquestionably that is the best mode of treatment for some months until the tendency to dislocation has subsided. Then a splint can be used; and the treatment continued, for several years, in the way described. Supposing the disease has gone through all its stages and made spontaneous cure by bony ankylosis with the head in contact with the dorsum of the ilium and the limb in an extremely deformed condition, so that the foot cannot be got to the ground, the legs cannot be separated at all, and the limb is wasted and useless; two alternatives present themselves; one is to saw through, or cut through, this ankylosis, or rather through the neck of the bone below the ankylosis, to draw the limb down into place, keep it there in splints for a considerable length of time and to expect union to take place at the point of section in the limb, in a better position; or in some rare cases we expect a false joint. Probably union in the new position is the most favorable result we can have. The only other alternative in this class of cases, or in cases where the disease is still going on actively with abscess and caries, great shrivelling of the limb and uselessness — the only other alternative is amputation at the hip-joint; which, if the patient survives it, cures it. It takes off this mill-stone which is dragging the patient down. Restoration to health and a fat, strong condition is usually the result. Formerly this could hardly be thought of, on account of the immense mortality of amputating at the hip-joint. Now it may be done with comparative safety by the new method of amputating, where great loss of blood is avoided. The vessels are best secured by the figure-of-8 rubber twist held by an assistant with a firm twist which can be tightened; and the limb is amputated, not by the old French method, but by the slower process of excision; and amputating the remaining portion of the thigh by the circular method. By this mode of operating the child loses very little blood; and if in a sufficiently strong state to stand any operation, will recover promptly and get a useful life afterwards, with a useless limb taken away.

The other point of which I wish to speak is, as to operative interference in the earlier stages of hip disease. That operative interference means either opening abscess, and cutting down and tunnelling out and gouging the diseased bone; or doing a still more marked operation, and endeavoring to excise the head and neck of the femur; endeavoring to scrape the acetabulum, if necessary; and allowing the patient to recover with what is called a false joint. The operation of excision of the head of the femur was formerly much more popular than now. In the first few years I was on duty at the City Hospital I did the operation a great many times and published a good many cases; and thought I obtained, sometimes, very excellent results. More mature experience has proved that these results are not so good as they first were thought to be; and the operation is not to be resorted to, provided the patient can be trusted to make a spontaneous cure. The arguments used in favor of excising were these: that you hastened the progress of cure; took out the diseased portion; gave thorough opening and evacuation of the abscess; and made a more useful

limb and joint. The most useful limb the child with hip disease can have is with a moderately well-placed ankylosis with the femur fastened to the ilium. That once firmly bridged over and solid, no subsequent disease affects it; and it is a strong limb which can be used without fear and without pain. The great deformity which was thought to be unavoidable, in former times, not only from shortening, but from inversion, is now known, as the child grows up, to be largely overcome by subsequent mobility of the ankle and knee, and of the pelvic joints at the sacrum; so that I have seen many of these cases where they were not touched by the surgeon, where the patient could walk very well indeed, and without the inversion which was thought unavoidable. That takes away one of the arguments in favor of excision. If you excise, you get fully as much, if not more, shortening, than if you trust to spontaneous cure with the head of the bone on the dorsum. Excision means two to two and a half inches of shortening always; and the subsequent joint is a loose joint. It is not so reliable. It is flexible, but not so firm; and it is liable to recurrent abscesses, and to continuation of the carious processes in the shaft of the femur. You cannot cut off much without making a useless limb; and there may still exist a tuberculous focus. After excision this may follow; that although you have taken off all the disease of the head of the bone, still there remains a tubercular condition of the acetabulum; which afterwards goes on to disease of the pelvic bones and defeats your object.

In addition to this there is another argument against great operative interference in hip-disease, and against opening up medullary cavities; and that is the chance of rapid dissemination of tubercular material throughout the system from any severe surgical operation. Of course, many children with ordinary hip-disease will die of tubercle in other parts of the body; will have tubercle in the mesenteric glands; in the membranes of the brain, or amyloid degeneration of the liver and kidney; so also they will have it in many cases with excision; and sometimes, to my surprise, it has become developed with such rapidity after excision that it seems as if the operation had started a new process of dissemination throughout the body. It seems to be pretty well conceded that the successful treatment of hip-disease is the mechanical treatment; that the earlier you get at it the better the result; and that operations should be reserved for two classes of cases; that operations to saw the bone and replace the limb in a new position should be reserved for those cases where there is ankylosis with such deformity that the patient cannot walk or stand or use the limb in any direction; and that formal excision should be reserved for cases where there is no prospect of cure by ankylosis, and where you may do something by cutting open the parts freely; scooping out the disease, and subsequently closing the wound.

In operating, you have an immediate mortality which is considerable. I have seen several patients die within the first forty-eight hours after excision; and if you get the most perfect result, you have a swinging joint and no more useful limb than before. There can be hardly any doubt, I think, that while surgery ought to interfere in advanced cases, where the child is dying of hectic and suppuration and caries; and that surgery ought to interfere in cases where the limb is so deformed that the child can neither stand nor

sit; that in other cases it is safer and wiser to follow the dictates of nature and seek her method of cure, which is by ankylosis.

Early diagnosis and early treatment are the best here, as in all acute diseases—in any disease, I do not care what it is. In any acute disease, which is threatening, you accomplish more in the first twenty-four to forty-eight hours than in the subsequent weeks; and in any acute disease of bones and joints, you accomplish more in the first few weeks, than in the subsequent months.

The main thing is to keep the joint at perfect rest; to restore it to its natural functions very slowly indeed, and with extreme care; and subsequently, if dislocation and ankylosis take place, to try to keep the limb in as good a position as possible; and to expect, if these stages can be gone through with before the age of puberty, that we shall get a permanent and spontaneous cure.

POTT'S DISEASE.

The next class of diseases of the joints that we shall take up, are those of the spine; and as we are on the tubercular and suppurative class, I will proceed to that which is called Pott's disease, or caries of the spine.

In the specimens passed around, it will be seen that the disease generally begins between the bodies of the vertebræ, in the intervertebral cartilages; that it is distinctly a joint disease. It may proceed as an ulceration of the cartilage, finally affecting the bodies of the vertebræ, or may begin, occasionally, in the bodies of the vertebræ themselves, as a tubercular deposit, affecting and destroying the cartilage by cutting off its nutrition; then leading to erosion of the bones, and to abscess and the deformity, humpback, which we recognize as characteristic of Pott's disease of the spine. Some authorities have gone so far as to say that caries, or Pott's disease of the spine is the result of injury; that the child gets a fall which injures its back; that the fall produces the disease. On the other hand, most authorities seem to be agreed that a condition existing beforehand of intrinsic delicacy of constitution, call it scrofulous or tuberculous or what you like, is essential to the production of the disease; that it may be precipitated and brought into action by a fall; but that it may arise spontaneously; that it is more likely to arise if the child has a fall than without it; but that the fall is not the one sole cause of the disease. One can hardly look at ordinary strong children in the first period in which they run about, from ten months to three years of age, and see their extraordinary suppleness and activity, and the falls they get, and the injuries they undergo without any permanent result, without thinking that the mass of mankind, who are healthy, at that age are so built and constructed, that ordinary injuries do not produce caries of their spines, or diseases of their hip-joints. On the other hand, in the very delicate child, slight injuries, which are thrown off and shed easily in the healthy one, start up this pre-existing tendency to inflammation of the cartilages between the vertebræ, or in the bone. That, I believe, is the usual history. Delicacy in the child, a slight injury or none at all, the commencement of disease in the cartilages, and caries of the vertebræ following. Unfortunately, in the early stages, this disease is more likely to be overlooked than hip-disease in its early stages. It is only in the very earliest stages of this disease that treatment can arrest

the diseased process; and as time goes on treatment becomes more and more hopeless; and when we interfere in the latter stages we should bear in mind that the cure of nature in this disease is also wholly by ankylosis; ankylosis at the expense of deformity; life at the expense of deformity; health at the expense of deformity; and that a case of advanced Pott's disease of the spine which recovers without deformity, and recovers straight and well, must be very rare—I mean without some deformity. Of course, we have all degrees.

The cartilages ulcerate, the vertebræ break down, their bodies drop together and melt away, the spines are thrown backwards out of position, the body becomes bent forwards, and in this false position nature makes a great effort at repair; throws out new bridges of bone; fastens together two adjoining vertebræ; holds the bones in their new position; and finally makes a cure with a stiff joint, and with deformity. That is the common result if left alone.

The early symptoms of caries of the spine are very insidious. They are so because of the youth and activity of the patients; and also on account of the great natural mobility of the spine, and the fact that pain, or diseased conditions, are disseminated, so to speak, up and down the long column, where one part can compensate, to a considerable degree, for a loss of motion and usefulness in the other part of the spine. This disease comes on generally soon after the child begins to run about and be active; one and a half to two years of age, to three or four years of age, is the common time. It rarely begins after childhood. It may begin in consequence of injury, or in consequence of that active tubercular or scrofulous condition which may be lighted up in the feeble child by the second dentition, at ten to twelve years of age. It rarely begins after puberty. If it does not go through its stages and cure itself before puberty, it never gets well, so far as my experience goes. It usually begins as soon as the child begins to run about and be active, and is overlooked, in this way. The child complains of being tired, and is thought to be merely fretful and capricious, or cross. The child is unwilling to go upstairs; it is unwilling to stoop down and pick up things with any celerity; it complains of constantly having pain in the stomach. This pain is about the præcordia and ensiform cartilage; and is a transmitted pain carried along the nerves between the ribs and to their terminations in the centre of the body in front, and the pain is experienced there, and is really a reflex of a disease of the bodies of the vertebræ and about the intervertebral foramina, from which two or three of these pairs of nerves have made their exit. The abdominal and præcordial pain, pain at the pit of the stomach, is a spinal pain; has nothing to do with the alimentary canal. The child is tired; unwilling to make exertion; complains of stomach-ache; frequently sits down to rest itself; supports itself on chairs and furniture; seeks a position where it can get its elbows on the table. A peculiar stiffness of the gait becomes developed very early; the child walks with care, instead of running with that perfect abandon seen in young children. It squares its shoulders, differently from the ordinary loose gait of the child; and it has a sort of military look in its whole bearing and gait. The scapular muscles are set. The child walks as if it were made of glass; and this is very characteristic, and unlike any other disease.

A stiff back, square shoulders, dislike to stooping, constantly supporting itself, and after a little while spasm of the legs, legs adducted, and a tottering gait. If this child is examined, you will find, probably, in the dorsal or lumbar region, a projection, a slight knuckle projecting beyond its fellows. This, however, may exist without the other symptoms; and when it exists without the other symptoms, it does not mean anything at all. You may take a healthy child, strip it, and stand it up, and if it is not very strong, you will occasionally see one vertebra out beyond the others, and looking as if it must have Pott's disease. You will find on examination that this is a false sign. This false sign is to be diagnosticated in this way. When the projecting knuckle is the result of caries of the vertebræ beginning, it is immovable; can never be thrown out of sight; never be effaced; and always stays, in whatever position the child puts its back. You must take this sign in connection with every other sign; but it is an extremely valuable diagnostic mark. But the weakly child, with a loose, projecting spinous process, retains the suppleness of the back, and if pricked or pinched, hollows the back and draws the projecting spinous process in, out of sight.

There is not much pain in the back in caries of the vertebræ. Very little pain is elicited on pressure. Much more pain is elicited on pressure in ordinary sprains of the back, or in an hysterical or nervous condition of the spine, than in Pott's disease. You may press on this vertebra; you cannot elicit pain or displace it. It is held by the muscles, by the ribs, by the locking of bones, in such a way that the pressure has no effect on the diseased point. There are two modes in which you can elicit pain. One is brutal and dangerous; the other is not. You are instructed by some authorities to crush down the spine, and see if the child will cringe. That is dangerous, because it may produce new crushing of the vertebræ already softened. There is another way; you may take the child, that is, lift the child, with the hands around the ribs, about opposite the seat of disease. The heads of these ribs are crowded in against the diseased vertebræ by this effort, and while no harm is done, a scream is almost always elicited; while it does not hurt a healthy child a particle. I do not attach so much importance, however, to these methods, nor do I advise you to pursue them. You can learn much by the general symptoms, and the fact that the projection will not disappear in the case of Pott's disease, and will otherwise. The spasm of the limbs, tottering gait, irritable bladder, wetting the bed at night frequently, constipation, change in the shape of the arch in front, so that the ribs become turned up, and the child becomes pigeon-breasted, the shoulders sinking more and more; the child ceases to grow in size; the head becomes sunken between the shoulders; one knuckle of the vertebræ becomes three, then becomes five, three prominent and two less so, until the marked and unmistakable hump is apparent in the back. This last sign is much more evident in some parts of the back than in others. In the dorsal region, where the curve is outwards, a prominence will show itself much more quickly, than in the lumbar vertebræ, where the curve is inward. The most marked and characteristic of all are the deformities produced in the cervical vertebræ; not only from the sinking in of the head, but by the great spasm of the muscles of the neck; by the peculiar position in which the child constantly carries

itself, and the deformity. Soon after this, signs of abscess begin to come on, marked by hectic fever and sweats. It is a long while before that abscess shows itself on the surface. It is at a great depth. It is near the centre of the body, in front of the vertebræ. There it seeks an outlet in two ways: either gravitates down and gets into the psoas sheath, and emerges under Poupart's ligament, and makes a psoas abscess: or else pushes directly backwards in the loins, emerges from between or below the ribs, and becomes a lumbar abscess. This abscess is essentially a cold abscess; full of caseous matter, and from broken-down vertebræ. It is extremely slow, a matter of months and years; frequently passes away in the end, after the child recovers by ankylosis, without breaking at all. It is absorbed and inspissated in such a way that the abscess finally disappears. When it does break it is after a long period and by a minute opening, by which nature guards the ingress of air into the sac, and lets the pus trickle from a little valvular hole. The abscess continues to discharge for several years. Meanwhile the deformity of the back goes on to cure; reaches its limit; ceases to press out further; begins to assume a fixed position; grows more and more so from month to month; bony ankylosis takes place; the abscess dries up, and the child has recovered, at the expense of great deformity of the back; of deformity of the chest; with strong arms and shoulders, but weak and wasted legs.

These patients live to old age. They appear to withstand other diseases with great vigor. When they have Pott's disease, they rarely have anything else. They are well and active. Moreover, in all this peculiar class of cases affecting the spine it is noticeable, I think, that mental vigor is greater than the bodily loss; that these children are distinguished by mental acuteness; like the blind, who shut off from one sense, develop all the others; so these children, shut off from locomotion and play, and possibly having some sort of diseased condition of the nervous system at one part, seem to develop a certain precocity of mind in the brain; so that wherever you see a humpback child, you find a bright one, who knows a great deal, and has learned as much by observation, as his fellows learn by education.

What shall be done in the way of treatment? Of course treatment to do any good must be applied at a very early stage; and here, just as in hip disease, we try to keep the part at rest. The treatment must be mechanical. The child at first must be confined upon its back on a frame, or with double extension, in some way, so that ankylosis may take place; or if this is impracticable, the child must be allowed to go about with a spinal support, in such a way as to take off the weight of the shoulders and head from the diseased part; to support the spine on the pelvis, and also to hold the parts at rest. The use of the frame on which the child can be strapped and held temporarily, is, I think, most useful, because this does not necessarily confine the child to bed. It can be taken up, turned about and kept clean, carried out of doors and kept more or less in the open air; while at the same time the spine is kept at a perfect state of rest. On the other hand, if this is not practicable, a good spinal support, and allowing the patient to run about, is probably the best mode of treatment. That gives nature a slight chance; and a slight chance usually suffices; and unless an abscess has taken place, a cure usually results by ankylosis.

As to the treatment of these abscesses themselves. Like all cold abscesses there are four methods of treatment: repeated aspiration; injection of a fluid to promote absorption; incision of the abscess, and fourth, I should say, letting it alone. It may become inspissated. Incise it and you run a great risk of septicæmia unless you can clear out and clean every pocket and scrape the carious bone. Repeated aspirations may be useful, but they inevitably end in a permanent opening through which the needle has been passed, and establishing a sinus, so that you merely anticipate nature a little, and prick an abscess, giving it exit through a valvular hole. These abscesses must be watched. There is no haste about them. They are slow. You can afford to wait. If they are opened, you must wash them out and scrape in so thorough a manner that the development of septic absorption may not take place; and even then death sometimes takes place in forty-eight hours from the shock of opening a large pus cavity. Apparatus, if applied early, will check the disease and hold the bones so that they will get in good position and unite by ankylosis. The cure, to be perfect, must be before puberty. Abscesses must be opened very slowly indeed. Remember, the best mode of treatment is to have the child secured on a frame or splint, and taken out of doors; kept in warm air; somewhere where it is constantly summer, if possible; or under the influence of sea air, and the best hygienic surroundings. It is extraordinary how much better these cases do in sea air, than in the air of the hot, inland country.

LATERAL CURVATURE OF THE SPINE.

This is very common. It is a distortion, but not a disease. There is no caries, there is no affection of the spinal canal. There is a twisting of the vertebrae in various directions on account of the unequal action of the muscles of the back. In consequence of this twisting and distortion, the ribs and sternum also get drawn out of place. One of the first signs which attracts attention is the fact that the shoulders are not even. You know how common this is in young people and in those who are growing rapidly; one shoulder is a little higher than the other, preferably the left. That is due in young subjects, however, frequently to careless attitudes in sitting and studying and writing, etc. But this comes on insidiously, and at the same time the shoulder is drawn up, the hip on the opposite side becomes pushed out, to compensate for it, so that we have a high right shoulder and a prominent left hip, for example. It is especially a disease of females, though not confined to them; probably more in females because they have less active exercises than boys. The curve is double, and when it inclines, for instance, to the right side in the upper portion of the vertebral column, there always is what is called a curve of compensation to the left in the lumbar part of the column, in order to balance the body. These two things always go together. In the early stages the spinal column is flexible and movable, and by throwing the arms and muscles in certain positions, the column can usually be restored to shape. As time goes on, if this trouble is not attended to, it begins to distort the cavity of the thorax very much, so that it becomes one-sided, and the child is also pigeon-breasted, so-called, from the projection of the sternum. In a little while the vertebrae begin to be rotated upon themselves, through the action of the displaced and weakened ligaments and

muscles, and although they are not drawn apart from each other, and although the spinal canal is never infringed upon in a way to make meningitis, the resulting deformity sometimes is incurable. The vertebrae become so far twisted out of shape that it is impossible to restore them.

The diagnosis and treatment both are most important in the earliest stage; and in that early stage the trouble can generally be corrected by the proper use of the muscles. One very useful exercise, which is very simple, is to have the child drilled to carry light weights upon the head. This may be any form of light weight; but a very good way to teach the child to do it is to place a little mat upon the head and set in it a bowl of water; and the child is instructed to walk backwards and forwards so many times. The slightest deviation will cause the tipping of the bowl and the wetting of the neck, and speedily remind the child to resume the upright position. It is a well-known fact, that among the races of the tropics and some parts of the south of Europe, the custom of carrying heavy burdens upon the head leads to an unusually upright and steady form. It is not the custom here in any form of labor; and it is never practised in gymnastic exercises. In addition to this, the child should be watched carefully about sitting, studying and sitting at school; and instructed, if weak, to lie down certain parts of the day in the prone position, on the stomach and chest, and with the arms in such a position as to bring the spine back to its natural curves. These children are weak, and if the spine begins to get out of place, the back muscles grow weak, and the child droops more and more. The other exercises which are more important are gymnastic and calisthenic exercises, which may be done with light weights and wands or dumb-bells and light gymnastic apparatus: rings, pullies, chest weights, etc. Care must be used in these exercises that the weakened set of muscles are exercised more than those on the well side; and the left-arm exercise for example is especially useful for the child who has a curvature to the right. Take the child and put it in different positions until you find what will best restore the curve, and then outline the exercises. By these, and the use of electricity and rubbing, the recumbent position and the carrying of weights on the head, the early cases can be cured; but when the disease becomes well confirmed and the vertebrae are really twisted out of place, we must try to force them back by the use of apparatus. This is difficult. Apparatus should not be used with the idea of being the only means, or the great means of cure; but only in bad cases, as a support, to prevent the parts from dropping over farther, until the muscles can be restored by proper gymnastic exercises.

The disease leads to terrible deformity if untreated. The child becomes dwarfed because the length of the vertebral column is lost in these curves. And some of the most marked deformities you see on the street are from this cause; at the same time there is nothing to interfere with the patient's living; and although remaining deformed, they may remain reasonably healthy; but after the vertebrae are thoroughly twisted, and the period of puberty is passed, and the growing age is beginning to diminish, a cure and perfect restoration to the upright form is almost impossible.

THE Royal Astronomical Society has awarded a gold medal to Prof. S. W. Burnham, of Chicago.

Original Articles.

FIVE CASES OF CHOLECYSTOTOMY.

BY JOHN W. PERKINS, M.D.,

Senior Surgeon, St. Margaret's Hospital, Kansas City, Mo.

CASE I. Impacted gall-stone, with dropsy of the gall-bladder and abscess formation about the stone; recovery.

Mrs. B., age twenty-two, a well-developed, rather spare woman, I first saw in May, 1889, suffering from an intermitting fever apparently malarial in origin. There was no history or symptoms of gall-stones other than that she had been subject to "bilious attacks," and had been losing flesh for about eighteen months. Early in July she had an attack of diarrhoea with griping, apparently due to gross indiscretion in diet. This lasted a week, at the end of which, July 16th, she had a chill, vomiting, great pain, at first all over the abdomen, but later referred to the epigastrium and right iliac fossa. Pulse 140, temperature 102°. About twelve hours after the chill she noticed a tumor midway between the umbilicus and Poupart's ligament. This appeared as an ill-defined, rounded, fluctuating mass, slightly bulging the abdominal wall forward—tense, tender and dull on percussion. The area between it and the liver was tympanitic. Extension of the legs was painful. Five days later the acute symptoms had partially subsided; she was still vomiting, and in pain except when under the influence of opiates.

On July 21st I operated, Dr. E. W. Schaffler kindly assisting. Ether. The incision was made in the right linea semilunaris, from the level of the umbilicus, two and one-half inches downward. The peritoneum was much injected. The abdomen contained considerable thin, yellow, flaky fluid. The gall-bladder was one-quarter of an inch thick, free from adhesions, and contained over a pint of glairy fluid of the color and consistency of white of egg. There were three green gall-stones, the size of large filberts, in the sac, and a fourth firmly impacted in the cystic duct. The dislodgement of this stone was followed by a flow of about three ounces of pus into the sac. This had formed between the stone and the liver, evidently from ulceration of the stone through the duct. I sewed the gall-bladder into the wound, and she recovered with a fistula which closed six weeks after the operation. She gained flesh rapidly, and has remained perfectly well up to the time of writing, four years after the operation.

The points of interest in this case were:

(1) The youth of the patient, in connection with the fact that the gall-stones had been present for many months, if not years, as shown by their size, their many and well-worn facets, and by the great thickness of the wall of the much-distended gall-bladder. There had been no bile in the bladder for a considerable time, its walls being pearly white. The stone must have been impacted in the duct at a period antedating the dropsy of the bladder and the subsequent hypertrophy of its walls. I know of no data by which to estimate the time which such a process represents, but it is not improbable that the onset of dyspeptic symptoms beginning eighteen months previous to the operation marked the time of the impaction of the stone, and that the symptoms were the result of the continuous flow of bile into the intestine. The

chill in May, with the subsequent intermitting fever, was probably not malarial in origin, but was an instance of Charcot's hepatic intermitting fever, and marked the beginning of the inflammatory action around the impacted stone, which terminated in the ulceration of the stone through the wall of the duct, the abscess formation and the peritonitis.

(2) The degree of exactness with which this case presented Fitz's cardinal symptoms of appendicitis. A history of diarrhoea and griping for a week, at the end of which occurred a sharp attack of general abdominal pain, rapidly locating itself over the right iliac fossa, followed by fever and the appearance of a tumor within the necessary area, showed a rapid but proper evolution of the symptoms. The position of the tumor was higher and more internal than is seen in the majority of cases of appendicitis, yet not uncommon, for in twenty-four cases observed by me in which the situation of the tumor was noted there were two in which the tumor occupied this high superficial position. Mr. Treves¹ has called attention to the possibility of the cæcum and the appendix lying as high, even, as the liver, due either to the non-descent of the cæcum or an extreme mobility. He comments upon the possible difficulties of diagnosis in case of an attack of appendicitis in parts so placed. Similar difficulties arise from the encroachment of a distended gall-bladder upon the pelvic contents, as in the present case, and one, more marked, related by Mr. Tait,² in which the enlargement was so great that he mistook it for a parovarian cyst.

CASE II. Multiple gall-stones, with crystalline deposit in bile; hepatic colic for twenty years; recovery.

Ellen M., age forty, Irish, five children. Entered St. Margaret's Hospital July 24, 1891, after a severe attack of colic, during which her medical attendant, Dr. J. W. Thompson, thought several times that she was dying. She was a slight woman, thin-visaged, with a brownish-yellow skin, not jaundiced. She had had repeated attacks of colic for twenty years, the attacks lasting from one hour to a day, and frequently preceded by intense jaundice. For ten years past she has also had periodical attacks of so-called malarial fever two or three times a year, and had been confined to her bed for months on account of it. She was in a state of constant distress, even when free from the more acute attacks. Examination showed a marked degree of tenderness over the region of the gall-bladder, but otherwise nothing abnormal. Her urine on two examinations was alkaline.

On July 29th I operated, with the assistance of Drs. Gray and Bennett. Ether. The incision was made vertically, two and one-half inches downward from the end of the tenth rib. The gall-bladder was small, free from adhesions and very elastic, so that its fundus was easily brought into the wound. It contained bile and several rough, black stones varying in size from a pin-head to a pea. The bile was black, as thick as vaseline, so that it had to be scooped out with a spoon, and consisted for the most part of small, black, acicular crystals. There was upward of an ounce of this material. I sewed the fundus into the wound, and she recovered rapidly with a fistula which did not show any tendency to close. At night the flow of bile was great, drenching the dressings and running into the bed; during the day there was scarcely any. The stools were normal.

¹ Surgical Treatment of Typhlitis, page 11.

² Note on a Case of Cholecystotomy, *Lancet*, 1889, page 1294.

The failure of this fistula to close was due to the fact that I had sewed the mucous membrane to the skin, which was easily accomplished on account of the great elasticity of the bladder, whereas in other cases I united it to the cut edges of the peritoneum and transversalis fascia, and found that they closed spontaneously.

A year after the primary operation the fistula still remained open. On June 2, 1892, I made an attempt to close it by dissecting up the edges of the mucous membrane and sewing the freshened surfaces together. It held for three days, the viscus gradually becoming distended, until there was an immense gush of bile and the fistula was re-established. This was suggestive of an obstruction in the ducts, but the stools continued normal. Three weeks later I opened the original wound and dissected most of the gall-bladder away from the abdominal wall, leaving only a small portion adherent. After sewing the inverted mucous membrane, I united the peritoneum over it with a Lembert suture and sewed the abdominal wound tightly. It never reopened.

Since the removal of the contents of the gall-bladder, now two years, she has gained much in flesh, has lost her sallow color, and has had neither colic nor fever.

CASE III. Multiple gall-stones; contracted liver; resection of rib; recovery.

Frank S., age thirty-five, single, painter, American. Admitted to St. Margaret's Hospital August 25, 1891. He had been a soldier in the United States Army, but was mustered out on account of frequently recurring attacks of colic. Since 1883 he has had from two to six attacks every year; generally became jaundiced just before each attack; had found that large doses of Epsom salts tended to keep the attacks away, and always shortened them. He was a muscular, spare man, with high color, and had been a drinker.

The question of diagnosis in this case was important. He had had no attacks for six months previously, and had no physical evidence of gall-stones. He had been under the care of Dr. Walter, of Leavenworth, and his post physician, both of whom had made a diagnosis of gall-stones. The possibility of the colic being due to lead was directly suggested by the man's occupation. The fact that he had changed his occupation, and for six months had no attacks, gave it some color. The history of a well-marked jaundice preceding the attacks, and their comparatively short duration, seemed to help out the diagnosis.

Granting the hepatic origin of the attacks, were there any stones remaining in the sac? The patient insisted that there were. He dreaded another attack; and at his earnest solicitation I operated August 28, 1891. Ether. Drs. Schauffler and Porter were present.

A vertical incision was used, three inches long from the end of the tenth rib downward. He had a long, narrow chest, and his liver was tucked up under the ribs so far that it was impossible to get the gall-bladder down to the edge of the ribs. I was obliged to enlarge the wound upward and to resect the ninth rib, taking out about one and one-half inches to get the fundus into the wound. Moreover, the pitch of the lower surface of the liver was much greater than usual and the bladder placed well under it, so that it was necessary to push up the lower edge and partly rotate the liver in order to see it. On opening the gall-bladder, I removed eight irregularly angular stones of a bright-yellow color. With difficulty I sewed the fundus into the peritoneum and fascia, between the

ends of the resected rib. This wound suppurated around the stitches. I believe the great tension upon them was the cause. Bile flowed freely from the fistula and continued for about five weeks, when the fistula closed, and has never reopened. He has remained in excellent health up to the present time.

CASE IV. Multiple stones in the ducts (?); recovery.

Mary D., aged twenty-nine, American, four children. Entered St. Margaret's Hospital March 15, 1892. For two years past has had attacks of colic, lasting from two to seven days; is often jaundiced, and has taken a great deal of morphine, under the direction of her medical attendant, Dr. Drake. The attacks recur every two to four weeks, and are accompanied by fever. I saw her during one of the attacks. The symptoms were typical. Physical examination showed nothing beyond a very marked tenderness over the region of the gall-bladder. She was a large, stout, fleshy woman, with a white, pasty skin and a thick, rigid abdominal wall.

On March 19, 1892, I operated, with the assistance of Dr. Bennett. Ether. The same vertical incision was used as in the preceding cases. There were many tough adhesions about the neck of the gall-bladder, but the fundus was free. This I opened, and found one small stone. On passing the finger along the cystic duct, however, I felt a large stone in the adherent mass, and opened the duct from the outside after failing to dilate a stricture from the interior of the viscus. I removed the stone with forceps, and then found several more lying along the cystic and common ducts, the latter seeming much dilated. The stones extended beyond the reach of the finger so as to necessitate another incision in the abdominal wall at right angles to the first and parallel to the edge of the ribs. This admitted the whole of my hand inside the abdomen. I removed eleven large, brown, faceted stones from a dilated pouch, the largest was three-quarters of an inch in diameter. The line of stones extended beyond the middle line of the body, but in what they were contained — whether in the common duct, or whether they were encysted in a pocket into which they had escaped — I was unable to ascertain on account of the adhesions which had matted the parts together into an unrecognizable mass.

The slits in the duct were closed with catgut as well as the great depth of the wound permitted. I sewed a fold of the omentum along the adhesions below and the peritoneum above, to act as a shield in case an extravasation of bile took place. I also put in a drainage-tube with its lower end close to the slits in the duct. The fundus of the bladder I stitched to the edges of the abdominal wound.

The operation was difficult, long and tedious, and the patient suffered from some shock after it. She rallied, quickly, however, but vomited at intervals for a week. Bile flowed freely from the drainage-tube and from the wound on the day following the operation, but caused no trouble. The wound healed rapidly, leaving a fistula, which closed in about six weeks. Before this happened, however, she had an attack of colic similar to those which she had before the operation, but milder in character. After leaving the hospital, which she did on the first of May, she had several of these discouraging attacks. Just before an attack the wound would reopen under tension, and an immense amount of bile was discharged. There was much flatulence.

The attacks seemed to be occasioned either by taking indigestible food or making unusual exertion. Was there a stone left behind? I believed that the colic was occasioned in some way by the filling of the gall-bladder, and the stricture at its neck associated with the loss of the bile from the intestine. Pepsine and hydrochloric acid seemed to relieve her immensely, and the attacks soon ceased. She has had no attacks during the past eighteen months, has gained thirty-five pounds, and seems to be in perfect physical condition.

CASE V. Impacted gall-stone, with severe and prolonged vomiting; death from acute oedema of lungs due to ether (?).

Miss M., age forty-five, single, Irish. Was first seen in consultation with Dr. E. S. Ramsay, July 19, 1892. She had been sick three months. The attack began with pain over the right hypochondriac region, not especially suggestive of hepatic colic, and three weeks later a tumor could be felt over the region of the gall-bladder. There was no history of previous colic, jaundice or vomiting. A diagnosis of gall-stones had been made by Dr. Ramsay, and under the use of anodynes and hot applications the tumor slowly disappeared. The patient seemed to improve rapidly until the last of June, when she began to vomit, and developed a painful area in the epigastrium, just to the right of the middle line. The pain radiated along the left edge of the ribs and into the left shoulder — was paroxysmal in character, not increased by food. The vomiting and pain had steadily increased up to the time when I saw her, and she had lost much flesh and strength. She had been seen twice during the previous week by another consultant, who was said to have expressed the opinion that she had cancer of the stomach.

She was a large, fleshy woman, but very weak, and showed plainly the effects of twenty days of vomiting. Her respiration was short and rather quick, her pulse 90, and only fair in character. There was marked tenderness over the area of the gall-bladder and the epigastrium, but nothing like a tumor could now be felt anywhere in this region. She had no cachexia. Her urine and heart were both examined, but nothing abnormal was detected. Her lungs were not examined. An impacted gall-stone was diagnosed and operation advised.

On July 21st I operated, Dr. Ramsay assisting. Ether was given by Dr. Bennett, who has given ether for me in upwards of two hundred capital operations, and always skilfully. I wish to mention this especially on account of its connection with what follows.

The incision was made in the middle line of the epigastrium. The viscera were adherent to each other and to the abdominal wall by old firm adhesions which seemed most dense toward the region of the bile-ducts, and through which lay down a mass of gall-stones could be indistinctly felt. I could detect nothing abnormal, however, about the stomach, other than the adhesions at the pyloric end. I attempted to reach the gall-bladder through the adherent viscera, but it proved so difficult and large vessels were so numerous that I quickly abandoned the attempt and made a second incision directly over the fundus of the gall-bladder. The adhesions were here more recent, and the gall-bladder was reached with little difficulty. I removed five brown stones, the size of peas, from the bladder and four more impacted in the cystic duct, which dilated easily under the finger. This was fortunate, for it would have been impossible to have opened

the duct laterally, without the expenditure of much time. The work up to this point had been necessarily slow, partly on account of the very deep wound and partly on account of the proximity of the large vessels in the adherent mass, which rendered rapid work dangerous. No accident happened, however, and she had lost but little blood. During the operation, it had been noted that her pulse was rising, and after the first thirty minutes, was upward of 120, but strong and of good character. Digitalin (gr. $\frac{1}{100}$) and strychnine (gr. $\frac{1}{60}$) were administered at two separate times. The respiration had been excellent, except that on one or two occasions when tension had been made on the adhesions in the middle line, the breathing stopped for a moment but immediately began again on relaxing the tension. The mass of adhesions was evidently attached to the diaphragm. When ready to close up the abdominal wound, the patient had been under the anæsthetic one hour, four ounces of ether had been used in a Clover's inhaler, and the anæsthetic had been temporarily removed for several minutes, when her respiration suddenly became labored and pumping, her face cyanosed and her pulse indistinguishable. Bubbling râles could be plainly heard in the chest at every breath, and frothy mucus flowed from her mouth. She became quickly conscious in the struggle for breath. Fresh air and nitrate of amyl relieved her temporarily. Her pulse became much fuller and stronger, but she remained cyanosed and the frothy mucus still bubbled from her mouth, the respiration still being shallow and pumping. The operation was rapidly completed without further anæsthetic, and the patient put to bed. For two hours she remained cyanosed, her respiration short and jerky, her chest bubbling, her pulse rapid and rather tense. She then sank rapidly, and died cyanosed two and one-half hours after the operation. Neither the cold, clammy, pallid skin of shock nor the pale restlessness of an internal hæmorrhage were present.

I afterwards learned that she had had at least two similar attacks of so-called "capillary bronchitis with hypostatic congestion and oedema" of the lungs, which had barely disappeared two weeks before the operation, the time when her lungs were last examined. No worse subject for ether could have been found.

REVIEW OF A SUMMER'S WORK IN GYNÆCOLOGY AT THE BOSTON CITY HOSPITAL.¹

BY JOHN G. BLAKE, M.D.

IN reviewing the summer's work in Ward S, a few words outside of the regular tabulated results may not be out of place. These remarks may be considered in the light of conclusions by the writer upon subjects treated up to date. While they contain nothing absolutely new, they at least enable him to revise previous opinions. And first a few words concerning

ALEXANDER'S OPERATION.

This has been performed by the reader eighteen times during the summer, usually at the City Hospital. The results, in all but two cases, were successful. In one, the ligaments appeared to be in a state of fatty degeneration. That on the left side broke off so easily that it was not deemed expedient to undertake shortening the one on the right. In the other, there was so

¹ Read before the Obstetrical Society of Boston, October 14, 1893.

much gluing together of the parts from old peritonitis, that it was impossible to draw the ligaments out on either side. A third case, at St. Elizabeth's, had a ligament on the left side no larger than a knitting-needle, while that on the right was rather above normal size. There was no difficulty in finding them, and the union was perfect in every case. Not a drop of pus formed in connection with any of these operations, which shows that antisepsis was carefully attended to. All proved perfect surgical successes; and therapeutically they were equally so, relieving completely the pain and pressure which called for their performance.

The question of permanence of relief, is often raised by those who have not done the operation, or who for any other reason are opposed to it. Pregnancy is quoted as entirely destroying the benefit acquired. In three cases, to my personal knowledge, and by careful examination, the position of the uterus remained unaffected by childbirth. Two were my own operations, and a third, operated upon in Lowell, had the same result. Dr. Davenport, in the *Boston Medical and Surgical Journal*, Drs. Johnson, Kingman, Conant, Burrage, and others whom we all know, say the same. If it were necessary, the writer could obtain a mass of absolutely incontrovertible testimony on this point. So it may be considered settled, that Alexander's operation neither prevents pregnancy, nor is impaired by that condition. On the other hand, the permanent emancipation of woman from dependence upon pessarials, is to my mind ample justification for the operation in cases of chronic displacement. Its simplicity, comparative freedom from serious results, and short period of confinement to bed, are large elements in its favor.

DILATING AND CURETTING.

This comparatively new substitute for the old, tedious and unsatisfactory treatment, by laminaria tents and repeated applications of iodine and acids, has been done sixty times without any unpleasant result to the patient. It has been resorted to in chronic endometritis, with or without catarrhal discharge; in prolonged metrorrhagia — narrowing or bending of the uterine canal, causing sterility or severe dysmenorrhoea; catarrhal salpingitis, where prolonged drainage was required; and ovarian pain independent of organic change. In cases of subinvolution it was also tried; and whenever it became necessary to explore the endometrium, it was found to be the quickest and safest means. Other conditions of the uterus, like hyperplasia, and granulations, are familiar to all, and need not be enumerated. I am prepared to speak very favorably of the results in many of the above conditions, while but moderate success attended others. For instance, in a case of chronic endometritis with endocervical discharge, a single operation will often diminish the size of the organ and absolutely stop the discharge, leaving a healthy normal uterus, and a cervix almost virginal in appearance, shape and size. I have seen this result so often that it is easy to foretell it. On the other hand, in the relaxed, flabby, or leaky uterus, the best results after dilating, followed the application of a mixture of Churchill's iodine and carbolic acid, or Monsell's styptic, to the endometrium, instead of packing with iodoform gauze. It must be borne in mind, that the condition is often only a symptom of a state of constitutional debility, and that local should be associated with general treatment. Acting upon this hint will often

save disappointment. The same remark will apply to all cases of pelvic inflammation of long standing, which are usually associated with marked debility and anemia — the result of pain and confinement to bed. Finally, it may be necessary to repeat the operation after an interval of two weeks or more.

In several cases I have seen marked benefit follow a repetition of the dilating, without or with the gauze packing, where a severe form of chronic enlargement of the uterus existed; or persistent salpingitis, in which long-continued drainage might be of advantage. The operation may be considered in the light of a very safe time-saver, since it enables one to accomplish in a few weeks what in old times would have taken months.

In cases of sepsis following labor or miscarriage which were treated in Ward S, and of which we had fourteen during the summer, the results were not always successful. Two terminated fatally from lung complications and septic pneumonia. This was after the utmost care in treatment of the endometrium combined with active general treatment, including the use of salines. In both, the tubercular diathesis was well marked. From observation extending over many years of general practice, I have reached the conclusion that there is marked susceptibility to this form of sepsis, where the diathesis exists. I should not, because of this, modify to any degree the thoroughness of treatment, but would not feel the same confidence in its result. On the whole, the success attending the method has been gratifying, and justifies the remark of Dr. Richardson, that "if we cannot always prevent the disease, we may often cure it."

The cases of pelvic abscess were eight in number and yielded to incision and drainage through the vagina. One, transferred from the medical department, where it had been admitted by mistake, was an exception. Here the abscess had burst into the rectum, establishing a fistulous opening. This closed after a time of careful, constant drainage, but the original abscess cavity showed little tendency to contract. The subject was a wretchedly poor one for treatment; a confirmed inebriate, anæmic and flabby, without strength to set up reparative action. At the expiration of my term of service, my advice was that she be transferred to the surgical side for removal of diseased pelvic tissue by laparotomy, as soon as her condition justified. Dr. Burrill removed the left tube and ovary; but the patient died three days after. Another case, treated at St. Elizabeth's by suprapubic incision, contained nearly a pint of fetid pus, got well rapidly. Two cases of chronic inflammation of tubes and ovaries, were transferred to the surgical service and the diseased tissues removed successfully. These were the only ones, which in my opinion justified resort to laparotomy. The number is certainly small in view of the frequency of the operation in these days, and the number and character of cases treated.

We become more conservative as we advance in years, and are loth to give up old and tried methods for those more dangerous and brilliant. Hence we prolong our efforts on the old lines, with a success that is gratifying. Even the younger and more enthusiastic laparotomists are beginning to pause and consider, whether milder means, longer continued, may not after all be the best treatment in many forms of chronic pelvic inflammations. I dislike to be classed as a foggy, but will not the experience of the older men of this Society bear me out, when I say, that many of the

conditions for which laparotomy has been done of late years would have yielded to patient, persevering, non-operative treatment? Dr. William Goodell, in the *Medical News* of December 9th, takes the same conservative view.

In the matter of malignant disease of the pelvis, the number was twelve. None of the cases were suitable for radical operations, with one exception. When the body as well as the cervix was involved, and it was reasonably sure that the disease had affected the pelvic glands and uterine appendages, the diseased tissue within reach was removed by curettes, scissors, actual cautery, and acids. By careful after-treatment, the disease can be kept in subjection, and immunity from pain and hæmorrhage assured. Life may be made endurable for a considerable time — from one to three years. On the whole, I cannot see that this is not as satisfactory as the results following more radical measures. When Dr. Chadwick says that all his vaginal hysterectomies died within a year, and Matthew Mann states that none were living at the end of five years, it seems scarcely worth while to go through so much for such doubtful gain. I am quite convinced that the day is not far distant, when surgeons in the light of their experience with malignant breasts, will be satisfied to leave the treatment of advanced malignant disease of the uterus, to palliative measures alone.

One case had the disease at the fundus, with no indications at the cervix; uterus enlarged, with only slight local symptoms calling for treatment; but rapidly running down, and with marked cachexia. The patient was not treated locally farther than to explore and ascertain the nature and extent of the disease. She was put upon supporting and alleviating treatment, sent home, and is still living.

A very rare form of epithelial disease of the vulva, invading to some extent the vaginal walls, was sent in by Dr. Edward Reynolds. There seemed to be no infection of the pelvic glands. The disease was thoroughly removed and but little deformity of the parts resulted. Time alone will determine whether the disease returns.

As will be seen, I have commented briefly on some of the operative cases; and while there is nothing very new in the report of such a service, there is confirmation of the success of old methods, which, to the older members at least, may afford satisfaction.

The following are the tabulated results prepared by Dr. S. E. Courtney, my very efficient senior house-officer, with the records of two cases which seemed of special interest to him:

CASE I. A. R., single, twenty-three years of age. Dysmenorrhœa since the establishment of menstruation. Examination showed the cervix to be acutely anteflexed, with stenosis of internal os and some endocervicitis. Extremely nervous. The uterine canal was dilated, curetted and packed with iodoform gauze. The gauze was removed from the uterus on the sixth day, and the patient discharged on the tenth day. Four months after operation the patient reports that she has no dysmenorrhœa, and has almost entirely recovered from the previously existing nervous symptoms.

CASE II. A young married woman; always suffered from dysmenorrhœa. She became subject to epileptic seizures immediately after her marriage. These attacks often numbered twelve a day, and had continued for six months. In order to straighten and enlarge the uterine canal, it was thoroughly dilated and packed with iodoform gauze. After the usual period had elapsed, the gauze was

removed. Subsequent examination some weeks after, with a view to inserting a stem-pessary, showed that the uterine canal freely admitted a large-size sound, and did not seem to present more than the ordinary curve of a virginal uterus. Patient has not had an epileptic seizure since the operation, and has steadily improved in health and strength. She has menstruated once since the operation was performed, with but slight pain. In view of the fact that the epileptic seizures apparently resulted from an aggravation of the dysmenorrhœa resulting from marriage, it is only reasonable to hope that the result will be permanent.

BOSTON CITY HOSPITAL.

GYNÆCOLOGICAL OPERATIONS BY DR. JOHN G. BLAKE, DURING HIS FIVE MONTHS' SERVICE.

<i>Dilatation and Curetting</i> , 60 cases.	
Endometritis, endocervicitis, salpingitis, etc.	43
Stenosis — Sterility	12
Anteflexion of cervix	5
Two cases of salpingitis transferred to Surgical Department for laparotomy; tubes and ovaries removed; discharged well.	
<i>Operation on Lacerated Cervix</i> , 19 cases.	
<i>Operation on Lacerated Perineum</i> , 18 cases.	
One operation had to be repeated.	
Cervix and perineum on same patient	8
<i>Alexander's Operation</i> , 18 cases.	
Right ligament not found in two cases.	
Ligaments small and adhering in the ring in one case, failure.	
Ligaments undergoing fatty degeneration in one case, failure.	
The most satisfactory result was an Alexander and perineum operation for complete prolapse of the uterus.	
Sixteen discharged well.	
<i>Septicæmia</i> , 14 cases.	
Six died and eight were discharged well.	
<i>Cancer</i> , 12 cases.	
Two died, nine relieved, and one, sarcoma of vulva, discharged well.	
<i>Pelvic Abscess</i> , aspirated and drained by tube per vagina, 8 cases.	
Three discharged well and five relieved.	
<i>Vulvo-Vaginal Abscess</i> , 7 cases.	
All discharged well.	
<i>Cystocele</i> , 5 cases.	
All failures in as much as stitches gave way.	
<i>Fibroids</i> , 5 cases.	
Removed in two cases only.	
<i>Pelvic Hematocœles</i> , 3 cases.	
One died and two relieved.	
<i>Uremia of Pregnancy</i> , 3 cases.	
All died.	

Clinical Department.

A PERSONAL EXPERIENCE WITH SMALL-POX.

BY H. WARREN WHITE, M.D.

THIRTEEN years ago, amidst the pleasantest memories of my life, there happened an event which in comparison was like a horrible nightmare.

After graduation in June, 1880, I had the good fortune to spend a year abroad. I had enjoyed immensely the sights and sounds of Berlin, Dresden and Vienna. I had been up the Rhine and down the Danube, as I had never expected to do. My dreams of European travel had become happy realities; and at last I had spent some months in Paris, the most enjoyable experience of them all.

Here I had applied myself to medical studies more thoroughly than elsewhere. I had taken courses and clinics with Jaccoud, Charcot, Fournier, Parrot and Latteux. The remembrance of those days is delightful. I enjoyed and profited much during that winter of 1880-81. But amidst that success and happiness I was to have a Waterloo indeed!

During the last week in February, while making a hospital visit in a children's hospital with Professor Parrot, I remember for the first time in my experience seeing three or four cases of variola that for some reason had been isolated and cared for in a distant wing of the hospital. It was nearly noon at the end

of a long visit. I had only a roll and a bowl of chocolate for breakfast those mornings, and was already feeling the need of my breakfast with a fork, as they call it. Before entering these apartments Parrot turned to the fifteen or twenty students and asked us if we were vaccinated, for if we were not, he would not advise us to continue the visit. Three or four turned back, but I went in with the others; for it occurred to me I had no need to fear this contagion. I had been successfully vaccinated when a baby and again when about fifteen years old; and an attempt at revaccination when in the last year in the medical school had been unsuccessful. I considered myself to have immunity from the disease, although this last time referred to I was vaccinated by a fellow-student with virus which I have since suspected was inert.

The cases under Parrot's care were all children; his prognosis very grave. Their appearance was *sickening*; and the stench-laden atmosphere I had good reason to remember again in about two weeks. This peculiar odor, once thoroughly appreciated, I believe can never be forgotten. It is like nothing else.

This exposure to variola was a positive one, occurring but once and lasting not over fifteen minutes. I handled neither patient nor anything in the room, but simply inhaled this heavily-charged atmosphere while tired and in a hungry condition. This was the first part of the last week in February. My medical course ended with the month of February; and so promptly on March 1st, I left Paris at 7 A. M., and ate dinner at the Bedford Hotel, London, at 6.30 P. M. of the same day. I felt particularly well; and while crossing the English Channel I was not in the least seasick, although the passage that day was more than ordinarily rough.

I came to London on Tuesday, settled quickly in my new quarters, arranged to attend a surgical clinic of Lister's; and Friday made my first visit with him at King's College Hospital. On Saturday I felt unusually tired and weak, and Saturday night was in alternate fever, sweats and chills. It was about ten days now since my exposure, which occasion had wholly passed from my mind. Sunday the 6th, was quite sick; a miserable feeling throat; sore and lame all over; something like an approaching tonsillitis, to which I had ever been very liable. Hoping to improve by going out, I rode to Bloomsbury Chapel. Did not enjoy my trip out; nor the sermon, although pronounced by good judges to be a most excellent one. My headache increased, with dizzy, giddy sensations. Glad to get back to the hotel and stay in the rest of the day. In the afternoon I noticed an erythema on the back of my hands and wrists, which increased. Complete anorexia. Temperature $101\frac{1}{2}^{\circ}$. In bed I felt better; and although my sleep was disturbed and uneasy, I worried through the night without calling for help.

Monday morning I was much worse; could not possibly suffer more backache and headache; tried to sit up; vomited. Temperature 104° . Erythema on hands and face, chest and abdomen now very marked. Called the landlord; and he, frightened at my condition, called his physician, Dr. Hall. In a careful, deliberate fashion he diagnosed scarlet fever as the trouble we had to deal with. He called my attention to the fact that a hotel was no place to be sick in (I should have known better, of course). Said I must go at once to the London Fever Hospital; that it would take all day to get an ambulance, and that the

law forbade using a public cab. It was "only a mile away," and I must walk! Somehow—I never remembered just how—I hastily packed and locked my luggage, carelessly dressed, and walked (with Dr. Hall's help) through the streets to the hospital. He dropped me at the door, and I dropped after I got inside. Was given a private room and special nurse, in honor of my youth and profession. Temperature after entrance 105° . Dr. Smith, of the staff, diagnosed scarlet fever. The fact that I had never had it and that it was very prevalent just then in London made it seem quite likely. Although variola later became very common in the city, just yet it had not become epidemic.

Tuesday. Still sore-throat, headache and high fever. The rash did not act typically, and some doubts were expressed as to its being scarlet fever. It had faded instead of increasing. Some one suggested variola. That day I remember how aggravating and unnecessary the noises of a hospital seemed to me. People talked incessantly; dishes rattled; doors slammed; ward trucks squeaked excruciatingly, and the wheels rattled miserably. I vowed, if I got well, I'd buy some lubricating oil and rubber tires, and present them to this hospital. I would tell them how much a poor devil suffered from noises which could be prevented.

Wednesday morning, before light, I detected about myself that odor which was unmistakable. I recognized the flavor of two weeks ago. I could not wait for daylight. I called the nurse, and told her I had no doubt now what I had, and to inform the house-officer at once that I had small-pox. She hastened away without a word. I put my hand to my face, and felt what seemed like a lot of bird-shot just under the skin of the forehead along the edge of my hair. The house-officer came at once, and confirmed my diagnosis. You can scarcely guess what chagrin, confusion and distress I caused in that hospital; and to make matters worse they had to wait all day long till evening for the small-pox ambulance to come for me. They would have got rid of me before, but they did not dare to use their own ambulance. I remember that ride very well. Their small-pox ambulance was constructed something like an American hearse. The patient was wrapped in blankets, shoved in, and the doors shut. It was like attending your own funeral. Lying in there and easily looking out the glass sides at the happy, healthy people walking the sidewalks, made me feel extremely miserable and unfortunate.

Thus I entered Highgate Small-Pox Hospital on the evening of Wednesday, March 9th, an unwelcome encumbrance. The first night there, I believe, was the most terrible in my whole experience. I arrived late, and was put into the centre of a long ward with twenty or thirty others. A howling snow-storm outside. There were large ventilators over each bed (like those in dissecting-rooms), and they were so wide open I felt the snow sift in upon my face during the night. The patient in the bed to my right was in a howling delirium all night long, but quieted down and died about daylight. Another died across the room, three beds away, on my left. There were no screens to put around them. There were only a few private rooms, and those were occupied by women. They changed my bed to the end of the room next day, where, by turning to the wall, I could avoid seeing the misery around me. There was no attention worth calling nursing, as good nurses would not accept such a position. The nourishment dealt around was thick

slabs of bread and butter and a bowl of tea. My mouth and throat were very sore, and I could not eat anything like this. After much begging I got some milk. For three days after that I had a wild delirium, more, I expect, from the excitement and shock of my experience than from the intensity of the disease, though the attending doctor said I was very sick and was part of the time in a camisole. My face was swollen and painful, and my fever ran high. I would not stay in bed. Was continually trying to extinguish imaginary fires, rescuing myself and bedding from the blaze. Once they found me with a handkerchief tied tightly around my neck, and I asked for a short stick to thrust under it and twist it to strangle myself. All such fine plans were prevented, and full doses of chloral and bromide taken after much persuasion. Some dim recollection of all this I have still—the most horrible remembrance of my life.

I saw myself for the first time on the following Monday (clothed in my right mind). Nobody would recognize me. It appeared as if my face had been burnt with steam or powder. I would not know myself. I feebly asked the doctor if this was a case of varioloid. I remember how he laughed. I tried to laugh, but it hurt me too much. I looked at my chart, which he showed me—"Discrete variola vera." This I felt had been the true article sure enough. There was a fee of four guineas, I found out, due the hospital for all this elegant entertainment; and I got the landlord to advance the same on the strength of my luggage still in his possession.

Tuesday, Dr. Smith, of the London Fever Hospital, sent me some oranges, grapes and flowers; but my mouth was too sore to eat the fruit, and somebody stole my flowers.

I went into the convalescent ward on March 16th. My face, itching unbearably, was relieved on application of carbolized vaseline. My companions here were very dull and stupid. The weather outside was stormy most of the time, the epidemic increased, and the hospital was crowded to the doors. Diet: boiled mutton and ale, t. i. d. Later I used to make the rounds with Dr. Goude (as my strength improved). I remember one remarkable case of hæmorrhagic small-pox in an old man. This man entered strongly pitted. It was his third attack. His skin was purplish. He was bleeding from every orifice of his body—mouth, nose, ears, bladder, rectum and stomach—and very conscious of his serious condition. He never broke out fairly before he bled to death. Deaths occurred daily. The mortality of confluent cases was nearly fifty per cent.; of the discrete cases, six per cent. It was very dull and lonesome to me; and it was too sickening for me to have much interest in it all, though the doctor did all he could for me. The horror and distress of a severe confluent case must be seen to be appreciated,—the phlegmonous face, swollen beyond possibility of recognition, swollen so that the eyes cannot be opened; the tongue protruding, so much swollen it cannot be held in the mouth; the foetid breath, drawn with great difficulty and much noise. Happily such patients are comatose, muttering or groaning in a typhoid-like condition, finally getting exhausted and giving up the struggle, or wonderfully living on, day after day, without nourishment, and finally recovering (in some cases most miraculously), but carrying the scars of the terrible struggle as long as they live. I was particularly sorry to lose the

night nurse, who had been very kind to me. She was found to drink the brandy ordered for the patients. I knew before that she had been drinking by the odor; but I was not surprised, considering what a place that was to work in. There was often in the night a confusion of howls from the long ward. Poor lunatics! I could scarcely believe that a few days before I was as delirious and making as much confusion as any of them. Many hundred patients passed through that course and graduated into the convalescent wards while the epidemic raged; but many others went the way to the dead-house.

On March 22d I took dinner once more like a civilized being, this being down-stairs with Dr. Goude, in his private apartments. I told him how poorly his patients were being nursed. He seemed to be much surprised and shocked to hear of it. I never knew if it was changed, or if it could have been; and in writing this I fully realize how much easier it is to point out defects than to remedy them.

On March 23d, after a thorough carbohc bath and baking of my clothes (letters sent out were thus baked), I was given my liberty once more. Although too weak to walk then, in about a week I was thoroughly convalescent. Always anæmic, I was extremely so for a month afterwards; my breath short and pulse rapid on the least exertion. I lost ten pounds. The only special treatment I received was sedatives for nervous symptoms; cold, wet cloths to the face, and carbohc ointments later; ice for the throat; and stimulants freely during convalescence.

I went later to the London Fever Hospital, and gave them £1. 1s. for their trouble (I hope they oiled the truck-wheels), and paid £3. 8s. 6d. to the landlord to cleanse my rooms at the Bedford and fumigate them properly, a nice little sum of between eight and nine guineas in all for my rather unusual *clinical* experience.

I could not help learning a few things about variola during this vivid experience which may be interesting just now:

- (1) The feeble protection of old vaccinations.
- (2) Importance of successful re-vaccination.
- (3) That a previous attack or vaccination give about equal protection.
- (4) "Varioloid" is not only a foolish, but a dangerous superstition.
- (5) The intense virulence of variola.
- (6) The long incubation.
- (7) Difficulty of diagnosis.
- (8) Rapidity of the disease and its stages.
- (9) The very general eruption on inner mucous and serous membranes, alimentary tract from mouth to anus, trachea, bronchi, urethra, vagina, conjunctiva.
- (10) Horror of the disease because of the isolation necessary, the pain and odor and delirium, and the poor nursing generally.

REPORT OF TWO PREGNANCIES FOLLOWING A LAPAROTOMY.¹

BY N. F. CHANDLER, M.D., MEDFORD, MASS.

OCTOBER 11, 1892, I was called to see Mrs. G., who gave me the following history: Age thirty-six. Family history not remarkable. Up to the time of

¹ Read by invitation before the Obstetrical Society of Boston, October 14, 1893.

her marriage, in 1880, she considered herself well, though not specially strong. About a year later, or in 1881, she began to have trouble which led her to consult Dr. C. M. Green. She was under his care until the fall of 1883, when she went to Dr. John Homans, who performed laparotomy November 21st, removing a cyst of the broad ligament. For four years after the operation her general condition was not good. She could not ride or walk any distance; even slight exertion caused fatigue. The catamenia were irregular, seldom more than three weeks apart, profuse but without much pain. In 1887 she began to improve in health; and in the latter part of that year she became pregnant. Before a diagnosis of pregnancy could be made a mucous polypus was removed from the cervix by Dr. C. M. Green, April 27, 1888. During this pregnancy, which was ended by miscarriage between the fourth and fifth months, her condition was apparently normal. She had the usual morning sickness, but nothing more. She had little or no unusual discomfort, and her general health steadily improved. So far as I have been able to learn, the cause of the miscarriage could not be explained, though the patient thought she had done more walking than usual, and felt that that may have been the cause. After the miscarriage her health was better than before; but even then she was not very strong, though she suffered from no particular ailment. If she became overtired or run down she was likely to have stomach trouble — food causing some distress and occasional vomiting. During June and July, 1892, she was not as well as usual.

From August 1st to the 8th, she was unwell as usual; and this proved to be the last regular period before a very trying pregnancy, though on August 28th she began to have some irregular flowing, which continued at intervals until September 14th, when an examination made by Dr. C. M. Green led to the discovery and removal of a cervical mucous polypus, after which the flowing soon ceased.

Three weeks after her last regular period she began to be troubled with nausea and vomiting, which soon became so bad as to interfere with her taking and retaining proper nourishment. She found she was losing flesh and strength and on October 10th I was called to see her. At this time she was fairly well nourished, though rather anæmic. Physical examination showed nothing remarkable. Temperature was normal and remained so all the time. Urine examined at that time, and frequently during the pregnancy, was always found to be normal. Bowels were constipated. Uterus could not be felt above the symphysis. At this time nausea was constant, and she was able to retain very little nourishment. After October 12th she was kept in bed, trying different articles of diet and various medicines to overcome the vomiting. We met with little success, however, and she continued to lose flesh and strength, though not as rapidly as one would have expected considering the small amount of nourishment she was able to retain.

On November 20th she was seen by Dr. Green, and a diagnosis of pregnancy was made. A few days later all vomiting ceased, and she was able to retain food without discomfort. Thinking the miscarriage five years previous may have been due to adhesions, resulting from the laparotomy, preventing the uterus from rising as it naturally would, the patient was kept in bed until January 1, 1893, or until the end of the fifth month. After this she was up and about her

room, but did not go down stairs until March 15th. At this time she was in a very good condition, having gained rapidly as soon as she was able to retain her food. She continued to take excellent care of herself, avoiding any exertion, going over the stairs only once a day and occasionally walking out on the veranda.

On the morning of April 2d I was called in haste to see her. I found her suffering from frequent severe abdominal pains, and with each pain the uterus could be felt to contract. Vaginal examination showed the uterus to be high in the pelvis, the cervix not taken up and the os not dilated. Fœtal heart distinctly heard on the left side. Sufficient morphine was given to check the pain at that time; but during the next two days the pains would return as soon as the effect of the morphine would wear off, and more had to be taken. April 5th she was free from pain, but nausea and vomiting were more troublesome than ever. She was not able to retain any food, and suffered constantly from nausea, whether taking food or not.

This condition of things persisting, in spite of efforts made to check it, Dr. Green was asked to see the case again April 10th. He found the uterus low in the pelvis, the head presenting, os admitting finger-tip. He believed we had better delay any operative interference for the present, in the meantime trying rectal feeding, and keeping close watch of the case.

On April 25th, or at the end of the eighth month, the mother's condition was such that further delay was thought inadvisable in the interest of both mother and child. Ether was given, and Dr. Green did manual dilatation, turning the child and delivering without any great difficulty and in a short space of time. After the mother had recovered from the ether there was no more vomiting, and her convalescence was uninterrupted. The child, a girl, appeared to be in very good condition when born, and did very well for twenty-four or thirty-six hours, when it began to have convulsions; and it died on the third day.

The points of special interest in this case, as they occur to me, are, the history of two pregnancies after an operation which changed the condition of the ligaments which hold the uterus in place, and probably left it less free to rise above the brim of the pelvis; the coincidence of a cervical mucous polypus appearing early in each pregnancy; and the obstinate vomiting which came on as soon as there was any unusual pressure in the cavity of the pelvis, and remained until that pressure was removed.

Medical Progress.

REPORT ON DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

(Concluded from No. 3, page 65.)

CEREBRAL INFANTILE DIPLEGIA.

FREUD¹⁰ unites under the above heading four types of cerebral disease: (1) General rigidity of cerebral origin (Little's disease); (2) Paraplegic rigidity (spasmodic tabes dorsalis of children); (3) Double spastic hemiplegia; (4) Congenital general chorea and double athetosis. General rigidity of cerebral origin has two fundamental characters: the lower extremities are much more affected than the upper, and

¹⁰ *Revue neurologique*, 30 April, 1893.

the phenomena of contracture exceed those of paralysis. It is also distinguished by a slowing and diminution of the cerebral influx on the co-ordinated actions of standing, walking and articulate speech, and by a varying degree of mental impairment. Strabismus is common; atrophy is absent; convulsions are frequent soon after birth, but they do not continue. The affection remains stationary with a tendency to improvement. Many writers consider double hemiplegia as closely allied to this, but others make a sharp distinction. Paraplegic rigidity, once thought to be purely of spinal origin, is shown, by the occurrence of strabismus and mental impairment, to be allied to general rigidity, but to be of a less severe type. Both of them are regarded by Freud as related and connected by many transition forms. The general form may improve until there is only a trace of rigidity in the arms, when the case resembles the paraplegic form. In other respects they are very much alike. In the general form there may be more or less paralysis, or a facial paresis, which forms a link with the cases of double spastic hemiplegia where paralysis predominates, and these transition cases are much more often seen. Cases of diplegia may also show transitions toward paraplegic rigidity. To produce double hemiplegic intra-cerebral or deep bilateral lesions are necessary, but superficial lesions, especially near the median fissure suffice for general or paraplegic rigidity; and the meningeal hæmorrhages of difficult labor afford precisely the lesions required. Congenital chorea and double athetosis may be classed with the cerebral diplegias, for in ordinary spastic hemiplegia it is not unusual to see similar motor troubles develop after paralysis, post-hemiplegic chorea. In other cases the chorea is manifest from the first, choreic hemiparesis. If this be the case in hemiplegia it must also be the case in double hemiplegia. Chorea and athetosis are also found in cases of rigidity. Consequently Freud would class them all under the one head of cerebral diplegia. Difficult labor is an important etiological factor in all four forms, premature birth only in the cases of general or paraplegic rigidity. Rigidity may also follow acute infectious diseases. Freud rejects classifications of the causes, and thinks it by no means easy to say, in cases where the symptoms do not manifest themselves until a year or two after birth, that the trouble was not of congenital origin. Many children are born before term or after difficult labor, but they have not diplegia, hence there must be a predisposing factor beside the accidental factor of traumatism. In syphilitic cases this factor may be regarded as the fragility of the blood-vessels, hence it is not illogical to suppose a similar state of the vessels in debilitated or cachectic children. It is a curious and unexplained fact that epilepsy is common in double hemiplegia and spastic hemiplegia, but extremely rare in general rigidity and athetosis.

EPILEPSY.

Hohn¹¹ regards as epileptic cases of sudden and periodic losses of consciousness, to which are generally joined convulsions of a definite type, without any notable modification of the central nervous system visible to the naked eye. In three cases which he has studied microscopically, he found an increase of the cells of the neuroglia, a thickening of their ramifications, an absorption of the intercellular substance, a considerable growth of new vessels and a weakening of the nervous

net-work. As a rule these changes are seen chiefly on the lateral face of the convolutions. In one case he noted a colloid degeneration of the ganglion cells, evidently connected with death during an attack. The insula and the gyri recti and fornicati were most affected. In the internal capsule was seen a degeneration of the fibres coming from the hemispheres, especially the motor fibres. In the pons, medulla and cord the pyramidal fibres were partly degenerated. Epileptic attacks may be explained by an irritation of the cortex alone, but a generalization of the attack demands that the bulbar and spinal fibres be equally involved. Hohn believes that the attack itself is due to a vaso-motor process, in the course of which venous stasis with acute oedema is produced in the central nervous system.

Fournier¹² recognizes as occurring in syphilis a form of epilepsy very different from what is ordinarily termed syphilitic epilepsy, or rather the epileptic form of cerebral syphilis. This form of epilepsy appears as an isolated symptom, without any other general or cerebral phenomena, and it continues under this form without association with other marked phenomena. It lasts a long time, it is neither cured nor checked by antisyphilitic remedies, but it is relieved, although not cured, by the bromides. True syphilitic epilepsy, on the contrary, is associated with other cerebral phenomena, rapidly assumes the symptoms of a specific encephalopathy, progresses more or less rapidly toward a cure or toward a fatal termination, and is very often benefited by antisyphilitic remedies. He cites a case in which, twenty years after infection, at the age of forty-five, epilepsy developed and continued without other complication for eleven years. Antisyphilitic treatment was useless, but bromides checked the frequency of the attacks, and was the only thing that did any good. In this form of epilepsy the invasion is sudden, unexpected and spontaneous; it comes on in full health, without prodromes or apparent cause. It usually begins with an attack of *grand mal*, but later *grand* and *petit mal* may be associated. The attacks of *grand mal* are like those of ordinary epilepsy, but they are not very frequent, the attacks of *petit mal* are much more frequent and may increase in frequency, even replacing the attacks of *grand mal*. This form of epilepsy occurs in the tertiary stages of syphilis. Fournier thinks it due to syphilis on account of the clear previous history, the advanced age at which the convulsions begin, by the absence of any other cause, and by the occasional co-existence of true syphilitic accidents. It differs from syphilitic epilepsy in that it is never partial, never is associated with other cerebral symptoms, lasts for years and never yields to antisyphilitic treatment. It is derived from syphilis, but, like tabes, it has not the nature or the essence of a syphilitic manifestation. Hence Fournier would call it "parasymphilitic epilepsy." Mendel's investigations, showing that epilepsy is not very infrequent after thirty in non-syphilitic subjects, make it doubtful whether Fournier's cases are really to be regarded as a special type.

Epilepsia tarda. — It is a well-recognized fact that the great majority of cases of epilepsy begin before the age of twenty, and a number of years ago Delany classed cases beginning after the age of thirty as "*epilepsia tarda*." Mendel,¹³ after a careful exclusion of

¹¹ Nordisk. medic. Arkiv, No. 15, 1893.

¹² Revue neurologique, 30 November, 1893.

¹³ Deutsche medicinische Wochenschrift, 9 November, 1893.

all cases simulating epilepsy, has studied 904 cases coming under his own observation. Contrary to the statements of Reynolds and Nothnagel, he found the male sex more disposed to the disease, 555 of his cases occurring in men. The largest number of cases begin between the ages of ten and fifteen, and over two-thirds, 628, before the age of twenty. From the age of twenty the frequency of epilepsy becomes distinctly less, but in the decade from thirty to forty no less than 99 cases began, so that Mendel justly takes exception to regarding the onset of epilepsy during that period as particularly remarkable, and only for the cases which begin after the age of forty would he admit the term "*epilepsia tarda*." After the age of forty epilepsy becomes much less frequent, only 53 cases beginning after that age, and only three cases (one man and two women) occurring after the age of sixty, the man being sixty-one, and the women sixty-two and sixty-three. Mendel's figures agree with the statements of Bennett and Gowers that *epilepsia tarda* is commoner in men, 38 cases occurring after the age of forty in men, and 15 in women; 6.8 per cent. of all cases of epilepsy in men may be classed as *epilepsia tarda*, and 4.8 per cent. of all cases in women. Delany found hereditary taint in one-half of the cases occurring after the age of thirty. Mendel accepts this view, for in one-fourth of his cases, where the history of any hereditary taint was hard to be obtained, owing to the social condition and the advanced age of the patients, he found clear evidence of such a taint. The direct exciting causes of *epilepsia tarda* seem to be the same as those of epilepsy of early life, fright and trauma playing distinct parts. In all Mendel's cases syphilis was excluded; hence he disputes Seeligmüller's claim that syphilis is to be suspected in all cases of epilepsy occurring after the age of twenty. Arthritis, which Charoot and Delany thought had some relation to *epilepsia tarda*, was never observed. Neither pregnancy nor the menopause seem to have much influence upon *epilepsia tarda*. In a part of the cases the attacks increase in frequency and severity, and the mental faculties deteriorate, just as in the epilepsy of earlier life; but in general the course is milder and not so progressive, and the mental faculties suffer less. The various psychical equivalents, and mental disturbances preceding or following the attacks, or occurring during the intervals, are not infrequently observed, and insistent ideas may be associated with the affection, but this is less common than in the epilepsy of early life. The prognosis and treatment do not differ materially from the prognosis and treatment in ordinary epilepsy.

INFECTIOUS NATURE OF CHOREA.

Pianese¹⁴ has undertaken an elaborate and thorough study of the infectious nature of chorea, and has come to some very important conclusions, which follow:

(1) From the cord of a young girl, who died of an attack of ordinary chorea of a grave and generalized type, he succeeded in isolating a bacillus 2 to 4 μ long and $\frac{1}{2}$ to $\frac{1}{3}$ μ wide, deprived of cilia, and endowed with slow movements. It grows on the ordinary culture media, and takes a characteristic aspect on gelatine. It is sporific, and grows well between 18° and 38° C.; it dies at 60° C. and — 5° C.; it resists rapid dessication for seven days, action of light for thirteen hours.

(2) Inoculations of pure cultures in animals (dogs,

rabbits, guinea-pigs) give positive results when practised in the anterior chamber of the eye, along the nerve sheaths and under the cerebral dura; they are negative if made into the subcutaneous connective tissue, the great visceral cavities or the blood-vessels.

(3) When the inoculations have given positive results the animals have presented a trembling, either general or limited to certain muscular groups (the muscles of the back or shoulder by preference); they become apathetic, timid, frightened at trifles, and they utter piercing cries when the spine is roughly touched. Ordinarily these phenomena appear twenty-four hours after inoculation. At first they are slight, but they increase; contracture develops, walking becomes more and more difficult, and death ensues at the end of five days. Dogs and rabbits inoculated along the sciatic have presented for twenty or thirty days a general trembling, with contracture and emaciation, and then have almost completely recovered.

(4) The organs of the animals who died from these inoculations were also tested; the brain, cord and nerves have always given cultures, but the liver, spleen, etc., have produced nothing.

(5) Inoculations of cultures sterilized in boiling water and in other ways have given the following results on animals; no febrile reaction either immediately after the injection or during the whole time that the animal remained alive; some phenomena resembling those which were presented by animals inoculated with pure cultures; apathy and some weakness for a few days, and then progressive emaciation leading to death after a period of time which varied with the size of the animal.

(6) The bacilli probably travel in the organism of the animals experimented on through the lymphatics.

(7) On a bacteriological examination, bacilli were found only in the cord of choreic cases, and only in the brain, cord and nerves of animals experimented on.

(8) The results of the histological examination in a case of chorea were as follows: marked hyperæmia of the central nervous substance, with numerous punctate hæmorrhages; little foci of inflammation, very limited, peri-vascular, and disseminated in a variable fashion; slight ependymal myelitis; beginning degeneration of the columns of Goll; in the lumbar cord, cellular infiltration in the gray horns, chiefly the anterior; the muscles were fissured, and showed waxy degeneration; marked hyperæmia of the liver and spleen; intracapsular hæmorrhages, cloudy swelling and necrosis of epithelium of the renal tubules; the lungs were dotted with hæmorrhages, and there was some pigment formation. In animals inoculated with pure cultures he found hyperæmia of the whole central nervous substance; pigmentary infiltration of the cells of the anterior and posterior horns of the cord; marked hyperæmia of the spleen; a high degree of hyperæmia of the liver, with very small spots of necrosis; cloudy swelling and necrosis of epithelium of the renal tubules. In animals inoculated with sterile cultures he found the same alteration of the ganglion cells of the cord; a little hyperæmia of the central nervous substance; degeneration, chiefly fatty, of the endothelium of the vessels of the liver; cloudy swelling, vacuolization and necrosis of epithelium of the renal tubules.

In this connection, it will be remembered that Dana,¹⁵ in a case of chorea, found a diplococcus in the deep layers of the pia and the superficial layers of the cerebral cortex.

¹⁴ La natura infettiva della corea del Sydenham. Istituto d'anatomia patologica della R. Università di Napoli, 1893.

¹⁵ See this Journal, 2 November, 1888, vol. cxxix, p. 446.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING October 14, 1893, the President, DR. CHARLES M. GREEN, in the chair.

DR. J. G. BLAKE presented a

REVIEW OF A SUMMER'S WORK IN GYNÆCOLOGY AT THE BOSTON CITY HOSPITAL.¹

In closing, he said he wished to make three points: first, that Alexander's operation did not interfere with pregnancy in any way; second, the value of the conservative as opposed to the radical operation in cancer of the uterus; third, the value of dilatation and drainage as opposed to laparotomy in catarrhal disease of the tubes.

DR. F. H. DAVENPORT said that in regard to the question of the influence of the Alexander operation on pregnancy, he had had no opportunity in his own cases to judge. There were two effects to be feared: one, the termination of pregnancy before full term; the other, the question of the position of the uterus during pregnancy or after its termination. With regard to the first, some statistics of value had been published by a writer on the Continent, which showed that the Alexander operation had very little tendency to interrupt pregnancy, while ventro-fixation, which has been advised as a preferable operation in these cases, did favor abortion. As regards the effect of pregnancy on the subsequent position of the uterus, he had not seen any statements. Within a few days, however, he had seen a woman who had been operated on in the early summer for prolapse of the uterus by the combined operation of perineorrhaphy and Alexander's, who was two or three months pregnant, and in whom the uterus was so prolapsed as to lie half over the vulva. He replaced it in the knee-chest position, and held it back by a pessary. It was not surprising that this should have occurred, for it has been his experience that in not a few cases it is at least six months before the soreness and tenderness about the incision disappears, which seems to show that the ligaments are often as long as that in becoming firmly adherent in their new position. In the present case, pregnancy supervening so soon after the operation, they would be very apt to stretch. As regards the operative treatment of cancer, the question of ultimate results is still so uncertain that very little of value can be deduced from statistics in favor of one operative procedure or another. Within a day or two, Dr. Davenport had seen three statements by German writers as to the per cent. of ultimate cures after operative treatment, which varied from five per cent. to forty per cent., showing either that they had different ideas as to what a definite cure is, or that they restricted their figures to one class of cases. As long as such uncertainty exists in the prognosis it is wise to give the patient every possible chance. Therefore he would advise a radical operation in all cases except the absolutely hopeless, feeling that even if the disease did return, it was robbed of so many disagreeable features that the patient's lot was preferable.

Dr. Davenport said that in his experience, when cancer returned after the removal of the whole organ,

it came back in the broad ligaments, and did not ulcerate through into the vagina. It was therefore unaccompanied by the hæmorrhage and foul discharge which is so distressing both to the patient and her friends, and her condition was very much better than if it had been left alone. He was also convinced that there was less pain.

DR. GEO. HAVEN has recently seen a case of pregnancy following Alexander's operation. The cervix was almost outside the vulva, but the case went on to full term and was delivered without complication. After convalescence he found the uterus subinvolved, but not badly retroverted, and he thinks that she will soon be in good condition. As to relief of epilepsy, spoken of in one case reported by Dr. Blake, he has seen it stated that almost any operation is often curative for a year or so, but the epilepsy is almost sure to return. He agrees with Dr. Davenport in preferring the radical operation for cancer, preferably the supra-pubic one.

DR. EDWARD REYNOLDS has had charge of some six cases of pregnancy referred to him because they had previously had an Alexander operation performed. All went on normally, and in all the uterus returned after the labor to the normal position, so that he would not have known that any operation had been performed. As to dilating and packing, he is of the opinion that good results are obtained when the tubes are straight and there is but one collection of fluid; whereas, if they are tortuous and there is more than one collection of fluid, this operation is a failure. As to cancer of the uterus, the disease is so short and disagreeable that he thought patients would run any risk of escaping by a radical operation, which he would perform as early as possible, especially if the disease was at the fundus.

DR. G. HAVEN said in a case he reported the other night the fundus and cervix were involved, and not the vagina. Here radical measures were very effective, while palliative ones would have been of no avail.

DR. JOHN HOMANS said that in his experience there was little or no pain on recurrence of the disease after a radical operation, while after palliative measures the pain was as marked as ever; and he mentioned two cases which illustrated this.

DR. SINCLAIR spoke of a case where the uterus was removed for cancer. Here a recurrence took place, with great tendency to hæmorrhage, which could be restrained. There was, however, no pain.

DR. DAVENPORT stated that this had also been his experience. With a recurrence after a radical operation there was absence of ulceration and discharge, no odor, rarely hæmorrhage, and much less pain.

DR. CHARLES M. GREEN: I confess that I am yet to be convinced of the wisdom of performing the operation for shortening the round ligaments during the child-bearing period. I have always supposed that the uterus was intended to be a movable organ, free to accommodate itself to a full or empty bladder or rectum, and free to rise and become an abdominal organ in pregnancy. If pregnancy ensues in a uterus raised and held by the Alexander-Adams operation, one of four things must happen:

(1) The uterus will be firmly held and prevented from rising, and miscarriage will occur. It is known that this sometimes happens, although probably less frequently than after ventro-fixation.

(2) The uterus will rise and pull away the shortened ligaments from their stitched attachment to the

¹See page 86 of the Journal.

pillars of the ring. This event would probably not occur if the ligament had been carefully stitched, unless pregnancy ensued very shortly after operation.

(3) The round ligament will stretch as the uterus rises. If the ligament does stretch, what assurance is there that after the lying-in month the uterus will be held in the position to which it was drawn by the Alexander operation? What assurance that the patient will be any better off, in respect to the position of her uterus, than she was before the operation?

(4) The round ligament, which is made up in part of muscular fibres from the thin, superficial, muscular coat of the uterus, will partake with the uterus in the muscular hyperplasia which normally occurs in the first half of pregnancy. If this muscular hyperplasia, this physiological elongation of the round ligament can be shown to take place, then we may expect that the ligament will involute with the uterus, shorten, and, after the lying-in period is over, hold the uterus where it was before pregnancy.

In the absence of positive information on these points, it seems to me that we need the evidence, not of three cases, nor of six, but of many times that number. When it can be shown by a considerable series of cases, observed for some months after the puerperal period, that miscarriage rarely occurs after and in consequence of the Alexander operation, and that the uterus remains in essentially its normal position after puerperal convalescence, my preconceived objections to this operation will disappear; until then I must regard it as unphilosophical from an obstetrical point of view.

DR. BLAKE, in closing, said that he restricted his operations for drainage to cases of catarrhal salpingitis. As regards cancer, in the early stages, he himself had no doubt of the value of hysterectomy; whereas, if the disease had extended, there was no gain to be had by removal of the uterus, and life was endangered by the operation. He preferred the palliative operation in this case, and not to endanger life.

DR. N. F. CHANDLER read by invitation

A REPORT OF TWO PREGNANCIES FOLLOWING A LAPAROTOMY.²

DR. GREEN said that it was an interesting coincidence in this case that in both pregnancies a cervical mucous polypus should have developed, and that the patient should never have had a similar affection at other times. He was not aware that these glandular polypi had any particular relation to pregnancy: they are found in all ages, even in old women. The most interesting feature in the case was the extreme nausea, vomiting and emaciation towards the close of the second pregnancy, and the explanation of these symptoms. When miscarriage occurred between the fourth and fifth months of the first pregnancy, it was thought at the time that the accident was due to adhesions, consequent on the laparotomy for removal of a cyst of the broad ligament, which adhesions prevented the uterus from rising. With this theory in view, the patient was kept very quiet, and much of the time in bed, during the second pregnancy. When, however, the early nausea and vomiting had disappeared, and the uterus had risen above the site of the supposed adhesions, it was hoped that all would go well. When nausea and vomiting supervened later in pregnancy, both Dr. Chandler and Dr. Green were at a loss to account for the symptoms. Great attention had been

paid to diet and hygiene, and there was no fault with the kidneys. Finally, it was found that the fetal head had descended low into the pelvis, apparently because the tension of the abdominal wall, made more rigid by the unyielding cicatrix, afforded more resistance to the enlarging uterus than the girdle of contact at the pelvic brim. The head descended, according to Dr. Green's recollection, a month or six weeks earlier than usual, and it seemed to Dr. Green that the aggravated nausea and vomiting were attributable to the pressure of the head on the cervical and pelvic nerves. It was well known that nausea in the early months was often due to pressure of the enlarged pregnant uterus while it was still a pelvic organ, and that the symptom disappeared when the uterus rose into the abdominal cavity. By analogy, therefore, it seemed reasonable that in a susceptible patient the same symptom might be caused by a premature descent of the head.

DR. J. HOMANS said that the cyst in this case weighed a pound, and was the size of an orange. The tube was long, measuring seven inches; that and the ovary were removed. There were no adhesions, and nothing remarkable about the operation.

DR. EDWARD REYNOLDS suggested that the partial dilatation of the os was a cause of the vomiting.

DR. GREEN presented an obstetric-case blank, which he had prepared as a convenience in recording cases at the bedside. The blank is similar to the one in use at the Boston Lying-in Hospital, some changes having been made to adapt it to the requirements of private practice.

		Para.	Age,	Color,
Birthplace of F.		Occupation,		
Birthplace of M.		General condition,		
Last m.	Quickening,	Labor expected,		
Preceding pregnancies and labors,				
Labor began,		First visit,		
Presentation and position,		Cervix,	Os uteri,	
Fetal heart { rate,		Maternal P., T.,		
location,				
1st stage ended,		Membranes ruptured,		
2d stage ended,		Pulse,	Temperature,	
3d stage ended,		Pulse,	Hæmorrhage,	
Placenta and membranes,		Length of funis,		
Perineum		Duration of labor,		
Child's name,				
Sex,	Weight,	Length,		
Left patient,		Pulse,	Condition,	

The first blank line is intended for the name and address of the husband, the second for the wife's name. Below are spaces for recording the birthplace of both parents, the occupation of the father, and the name and sex of the child: all of these data are needed for the report required by law to be made to the city registrar. There is purposely room for but brief notes on the face of the blank; but on the back may be recorded any points of particular interest in the labor or convalescence. The stereotyped plate for printing these blanks is with Mr. George H. Ellis, 141 Franklin Street, who will furnish the blanks for the cost of printing.

² See page 93 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 25, 1894.

*A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.***SUBSCRIPTION TERMS:** \$5.00 per year, in advance, postage paid, for the United States, Canada and Mexico; \$6.56 per year for all foreign countries belonging to the Postal Union.*All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 83 Washington Street, Boston.**All letters containing business communications, or referring to the publication, subscription, or advertising department of this Journal, should be addressed to the undersigned.**Remittances should be made by money-order, draft or registered letter, payable to***DAMRELL & UPHAM,
283 WASHINGTON STREET, BOSTON, MASS.****AVOIDABLE RESULTS AND ESSENTIAL
PRECAUTIONS IN VACCINATION.**

DURING the present season, there has been a large amount of vaccination done throughout this State and reports have come to us from numerous quarters concerning the prevalence of vaccine disease, especially among school-children, and the results.

First, the vaccine which has been used is the cow-pox virus obtained from some of the many establishments that now guarantee to physicians a supply of pure animal vaccine. The use of the humanized or Jennerian virus seems to be almost a thing of the past. Nevertheless a few physicians still prefer the humanized virus, one remove from the cow, using for vaccine material the clear lymph of a healthy child, taken about the seventh day; and it has been affirmed that this virus acts more mildly than the animal vaccine, while being equally efficacious in conferring immunity.

With regard to the results of vaccinations, the vaccine disease seems in most cases to have run a fairly typical course, occasionally being of rather severe character. The unusual number of cases of marked general vaccinia eruption is to be accounted for by the unusual number of cases of vaccinia now in the community, and in proportion to the total number of children undergoing vaccination at one time is not probably at all increased. In one school in the vicinity of Boston there were about a hundred children successfully vaccinated (primary vaccination); of this number fifty per cent. continued their attendance at school without any interruption; twenty-five per cent. were obliged to absent themselves from school for a few days only, while the other twenty-five per cent. were confined to their homes for more than a week.

A physician living in one of the cities on the coast writes us that in his locality there have been an unusual number of severe cases of vaccine disease. He has never before seen so many "bad arms," and some children have been very sick. All the physicians in that vicinity have used virus obtained from the — Vaccinal Institute. He has observed from the twelfth day

intense inflammatory oedema develop around the point of vaccination, then lymphangitis and cellulitis, fever and other general symptoms of a septicæmic character, finally an extensive cutaneous necrosis in the region of the vaccination. In one instance (in which about the whole city was interested) he despaired of the life of his patient; fortunately the child is now recovering, but with a large slough at the point of vaccination. He believes that in this, as in other similar but not so violent cases, there was a complication of erysipelas due to the introduction of the streptococcus by scratching. Other physicians in the same locality have had cases of a similar nature, and it has been believed that the vaccine obtained on a certain occasion from — farm was of a particularly virulent nature. The cellulitis, erysipelas or lymphangitis which have caused such dire alarm and opposition to vaccination are to be explained by the same principles as under any other surgical operations; some contamination of the wound by micro-organisms. In vaccination the physician has not a complete control of the whole chain of asepsis; he must trust to the honesty and cleanliness of the vaccine establishment, which should be above suspicion.

Our correspondent writes that the ivory points in those packages were stained *red*, as if from admixture of blood; this certainly indicates that sufficient care was not taken in charging the points.

These facts show that the owners of vaccine establishments have a responsibility to physicians and to the public of which they cannot be too mindful. They are expected to furnish vaccine of unexceptionable quality; obtained from healthy heifers, at just the right time, and under conditions of perfect cleanliness and asepsis. The lymph which is furnished, should be clear lymph, not lymph and blood or pus.

Physicians, too, have a responsibility in every case of vaccination, and this little operation should not be performed in a hasty and slovenly manner. Though antiseptics may not be used during the operation, as likely to interfere with the result which is sought, yet vaccination should be performed with perfectly clean instruments, and aseptically. The scarification may be made with the ivory points themselves, or with a fresh needle for each case, which in addition may be passed through an alcohol flame. Some physicians wisely make a practice of washing the arm before vaccination. All should do so. The same point should never be used on two patients: we fear this has been done, though very exceptionally.

What shall be done with the vaccinated arm? Some apply immediately after the operation a little isinglass plaster over the abraded surface, the vaccine being allowed to dry in, and the plaster having previously been dipped in boiling water. The piece of plaster is taken off next day, and the arm covered with some antiseptic dressing, such as carbolic gauze. This might be expected to be sufficient to protect the vaccine sore from extraneous germs, the gauze being renewed every day. The dried lymph may be covered by aseptic

gauze or cotton glued to the arm at the edge with collodion.

We know physicians who take these precautions every time they perform vaccination. It would probably be better that all should. The vaccinated person is provided with a roll of antiseptic gauze for daily dressings, according to the strict directions of the physician. In this way, the danger that foreign microbes (staphylococci, streptococci, etc.) may enter the solutions of continuity caused by the vaccine disease, and thus add to this disease the evils of microbial associations—and we well know how much in some diseases, as diphtheria, the original virulence is intensified by such associations—this danger, we repeat, is thus likely to be reduced to a minimum.

It might be better that vaccine farms should be established and managed by the State, the points being sold at cost or furnished free. Such a proposition is at present under consideration in this State. Where there is a good State Board of Health, a proper supervision for such a farm or farms already exists.

THE ARMY MEDICAL SCHOOL AT WASHINGTON.

It is always easy to find some matter of special interest in the Report of the Surgeon-General. This year, one of the first subjects to attract attention is the Army Medical School authorized by a General Order of June 24, 1893. Its object is the further instruction of newly-appointed medical officers. Severe as the ordeal of the Army Examining Board may be, the successful candidate has still much to learn before he is fitted to thoroughly perform his duties. In the words of the Report, "Certain of these duties are more important than the clinical treatment of individual cases of disease and injury, because the efficiency of a command may depend upon their proper performance."

The number of questions of practical sanitation on which the medical officers of the army must be well informed are numerous,—matters of site and soil; of ventilation, heating and drainage; of sewerage and the disposal of garbage; of water-supply; of food, slaughtering and storage; of disinfectants; of bacteria and ptomaines. Few recent graduates of our medical schools can be supposed to have thorough knowledge of such subjects, and it is to furnish such post-graduate instruction, as it would be called in civil life, that the Army Medical School is established.

The school is situated at Washington, and its course of instruction will extend over four months, beginning annually on the first day of November. The faculty consists of a president, who will deliver lectures on the duties of medical officers in peace and war; a professor of military surgery, including the care and transportation of the wounded; a professor of military hygiene, including practical instruction in the examination of water, air, food and clothing from the sanitary point of view; and a professor of clinical and

sanitary microscopy, including bacteriology and urinalogy. Truly, the young army surgeon will not find any encouragement to idleness in the first four months of his service.

One of the companies of instruction of the Hospital Corps is also stationed at Washington, and its presence there is of value in connection with the work of the school. The Army Medical Museum and the library of the Surgeon-General's Office cannot fail to be also of service. The direct value of such instruction will be evident at once to any one familiar with the experiences of the late war.

The question naturally arises whether the medical schools of the country furnish to civilians equal opportunities for becoming skilled sanitarians.

There is also a suggestion for the volunteer forces, for it is hinted that the medical departments of two States were not so fully prepared for actual work when the emergency arose as they should have been.

MEDICAL NOTES.

INFLUENZA AMONG THE PINE RIDGE INDIANS.—The influenza has been epidemic and exceedingly fatal among the Indians at the Pine Ridge Agency during the last month. The Indians are poorly protected against the cold weather, and are often sick but a day or so before they die.

A NARROW ESCAPE FROM BURIAL ALIVE.—A town councillor of Barton-on-Trent in England had a narrow escape from burial alive last week. At the very last moment, during the committal service in the cemetery, a friend detected what he thought was a sign of life. On examination the man was found to be still breathing, and was carried home.

DELEGATES TO THE INTERNATIONAL SANITARY CONFERENCE.—Dr. Edward O. Shakespeare of Philadelphia, Dr. Stephen Smith of New York and Dr. Preston H. Bailhache of the Marine Hospital, are the delegates appointed by the President to represent the United States at the international sanitary conference which meets in Paris to-day.

THE QUARCENARY OF PARACELSUS.—The four-hundredth anniversary of the birth of the famous Theophrastus Paracelsus von Hohenheim, at one time Professor of Medicine at Basle, was celebrated the 26th of last November by the villagers of his native place, Maria-Einsiedeln in Switzerland.

THE HUSBAND'S LIABILITY FOR THE WIFE'S MEDICAL EXPENSES.—The Supreme Court of California recently ruled that where the husband is liable for his wife's support, the wife's estate cannot be charged for medical services, medicines and nursing which he secured for her in her last sickness, but that he alone is liable for them.

TYPHOID FEVER ON A WARSHIP.—A warship is a rather unusual place for an epidemic of typhoid fever to occur in; but over thirty of the crew of the British

warship *Canada*, have been sent to the hospitals at Bermuda or Barbadoes. The admiral has requested that the vessel be ordered home at once before the whole crew gives out. It would be interesting, and in such a case probably not difficult, to trace the infection. So far no explanation has been published.

SMALL-POX ON A NEW YORK STEAMER.—The Ward-line steamer *Seguranca*, which sailed a fortnight ago from New York, has been quarantined at Vera Cruz with twenty-two cases of small-pox on board. It is thought that the disease was brought on board at Havana by some steerage passengers.

"VARIOLIN" AGAIN.—The use of "variolin" for the internal administration of vaccination has been sanctioned, it is said, in Brooklyn by the principals of some of the public schools, who have accepted certificates of treatment by this means as a substitute for the required certificate of vaccination.

A FOUR YEARS' COURSE AT THE NATIONAL MEDICAL COLLEGE.—At a meeting of the Faculty of the Medical Department of Columbian University, of Washington, D. C., held on April 11, 1893, it was unanimously agreed to make a four-year course of study necessary before graduation. This measure went into operation at the beginning of the present session of 1893-94. Each of the four courses covers seven months of lectures.

BOSTON AND NEW ENGLAND.

THE NEW CREMATORY AT BOSTON.—There have been already six bodies cremated at the new crematory at Forest Hills this year, and several engagements are made for the next week or two. The possibility of being cremated in New England has apparently increased the interest in this means of disposal of the dead.

SMALL-POX IN BOSTON.—During the week ending at noon on Wednesday, January 24th, there were four new cases of small-pox. There have been no deaths during the week, although one of the last patients, a woman, is critically ill. There are now in the hospital fifteen patients, five of whom are convalescing. Since the first case on October 30th there have been thirty-six cases and seven deaths.

DEATHS AT BOSTON FIRES.—The records of the Boston Fire Department show that there were twenty-six deaths at fires in 1893. Only one of those was of a fireman, a ladderman who was crushed between his truck and an electric-light pole while on the way to a fire.

SMALL-POX IN MASSACHUSETTS.—There have been reported to the State Board of Health since the 21st of last September, when the first case occurred, nineteen cases of small-pox from places outside of Boston. Of these seven occurred in Lowell, four in Holyoke, two each in Worcester and Methuen, and one each in Somerville, Brookline, Marlborough and Yarmouth.

VACCINATION AT NEWTON.—The free vaccination stations in Newton were reopened for three days last week; and 729 persons were vaccinated, which is about twice as many as previously registered.

THE NEWTON HOSPITAL.—At the annual meeting of the Corporation of the Newton Cottage Hospital, held last week, it was unanimously voted to change the name of the institution and corporation from Newton Cottage Hospital to the Newton Hospital. The annual reports showed an increase of thirty-two per cent. in the number of patients during the past year, and that the new wards for contagious diseases had not been vacant at any time during the year. A nurses' home has also been completed.

DIPHTHERIA AT CALAIS, VT.—So many cases of diphtheria have occurred at Calais, Vt., the last ten days that three of the schools have been closed for the present.

DIPHTHERIA IN GRANBY, CONN.—There is a considerable epidemic of diphtheria at present in Granby, Conn., so that the county health-officer has ordered the schools closed.

SMALL-POX IN WINSTED, CONN.—Several cases of small-pox, some fatal, have occurred the last week at Winsted, Conn.

THE NEW HAMPSHIRE STATE INSANE ASYLUM.—The annual report of the Superintendent of the New Hampshire State Insane Asylum shows that during 1893 there were 248 men and 60 women under treatment in the hospital. The mortality rate during the year was 7.2 per cent. The percentage of recoveries, based upon the number of cases admitted, and excluding all recoveries from opium or alcohol habits, was 25.80 per cent.

NEW YORK.

MORTALITY.—During the week ending January 20th the number of deaths reported in this city was 888, as against 929 the previous week, which latter mortality was 103 less than the average of the corresponding weeks for the past five years. The deaths from influenza were 18, which was an increase of 3 over the week ending January 13th; but the deaths from pneumonia, 150, were 16 less. There were 6 deaths from small-pox, against 8 the previous week, and there was a slight increase in the mortality from diphtheria and typhoid fever.

ANNUAL MEETING NEW YORK COUNTY MEDICAL ASSOCIATION.—The annual meeting of the New York County Medical Association was held on January 15th, and the attendance was the largest in the history of the Association, about 300 members being present. The report of the Corresponding and Statistical Secretary, Dr. A. D. Ruggles, showed that during the past year 121 new members had been elected, and that the Association had lost 14 members by death and 27 from other causes. The total membership is now 951. The following officers were elected: President, Dr. S. B. Wylie McLeod (re-elected); Vice-

President, Dr. Augustus D. Ruggles; Recording Secretary, Dr. P. Brynberg Porter (re-elected); Corresponding and Statistical Secretary, Dr. Wm. W. Van Arsdale; Treasurer, Dr. John H. Hinton (re-elected); Member of the Executive Committee, Dr. John Blake White.

OUTBREAK OF SMALL-POX AT CHARITY HOSPITAL.—A serious outbreak of small-pox has occurred at Charity Hospital, and the history of it is of more than ordinary interest. On January 9th, Dr. Henry M. Silver, Demonstrator of Anatomy at Bellevue Hospital Medical College, was about to give a lecture before a class of students at that college, and on removing the cloth from the subject on which he was to give his demonstration in the anatomical room adjoining the amphitheatre, he was astounded to find the corpse covered with the pustules of small-pox. He at once notified the Bureau of Contagious Diseases; the building was disinfected, and about 125 students were vaccinated. On inquiry, it was found that the body which had recently been received from Charity Hospital was that of Louis Schmidt, sixty-three years of age. It seems that in the latter part of December Schmidt was taken from a lodging-house in East Broadway to Gouverneur Hospital, suffering from malignant syphilis. Whether small-pox had also developed at this time has not transpired; but, at all events, the latter disease was not diagnosticated by the physicians in charge, and on December 26th he was sent to the reception ward of Bellevue Hospital. Here the examining physicians confirmed the diagnosis of syphilis, and on the following day he was sent to Charity Hospital and admitted to the syphilitic wards. The man continued to grow worse, and on January 2d he died. It still being believed that he had suffered only from syphilis, the body was removed to the city morgue, where it was kept for nearly a week, that friends might have the opportunity of claiming it. Then it was taken to Bellevue College and placed among the subjects for dissection; and it was not until January 9th, as mentioned, that the real cause of death was discovered by Dr. Silver. The correctness of his diagnosis has now been abundantly attested. On January 16th three cases of small-pox developed in the male wards of Charity Hospital, and the patients were at once sent to North Brother Island. That evening Dr. Doty, Chief Inspector for Contagious Diseases, sent four of his corps to Charity Hospital, who vaccinated over eight hundred persons—patients, physicians, nurses and servants—and the whole institution was placed in strict quarantine. On January 18th seven additional cases of small-pox developed, and among those attacked with the disease was the warden of the hospital, Mr. Roberts. They were all removed to the hospital for contagious diseases on North Brother Island. On the same day a case of small-pox was reported at the Florence Mission for Fallen Women on Bleecker Street, and an investigation showed that the patient, a young woman twenty-two years of age, had recently been discharged from

the work-house on Blackwell's Island. While serving a term of imprisonment there she had been detailed as a scrub-woman in Charity Hospital, and it was while she was engaged in cleaning the ward where Schmidt was lying that she contracted the disease. The Florence Mission, which has about thirty inmates, has also been placed in quarantine for three weeks.

Miscellany.

TO ABOLISH THE OFFICE OF CORONER.

THE following is an abstract of recommendations contained in the memorial of the select committee of the Medico-Legal Society of New York, addressed to the Legislature of the State and dated January 10, 1894:

Your memorialists, after duly considering the premises, unanimously recommend to your honorable body that you amend the existing statutes, regulating the powers, duties, and compensation of coroners

(a) By creating a new officer to be styled "Medical Examiner," as in Massachusetts and Connecticut; or "County Physician," as in New Jersey, who shall be authorized to conduct inquests or examinations in all cases where death has occurred by violence, or there is reason to suspect that the same is due to other than natural causes, having charge of all autopsies and all questions on the medical side of the inquiry, without a jury before a competent court, or before the coroner as a judicial officer, if retained after the plan adopted in Connecticut.

(b) That said medical examiner be appointed by the county judges of each county, except New York, and by the Chief Justice of the Court of Common Pleas in that county, and only physicians skilled in their profession, of at least five years' practice, to be eligible to such appointment, and so far as possible without reference to partisan political considerations.

(c) That only persons learned in the law shall be eligible to the office of coroner, and that if the inquiry is conducted before the coroner, he shall have charge judicially of all legal questions, and that the hearing, inquest, and proceedings shall be the same as if before the Police Magistrate in the City of New York or other cities of over 100,000 inhabitants, and before Justices of the Peace in all counties of the State except New York and King's Counties.

CLARE BELL, *Chairman*, THEODORE H. TYNDAL, CHARLES G. GARRISON, WYATT JOHNSON, M.D., ABRAM H. BAILLY, H. W. MITCHELL, M.D., MORITZ ELLINGER.

CHOLERA.

It may be interesting to our readers to read some extracts from a letter from Constantinople written last December. The letter is not from a physician, but from a person having such opportunities for accurate observation as to entitle his account to the readiest acceptance:

"Cholera is said to be increasing. I pity the poor, especially the natives, for they have no protection from the municipal doctors, who seize them on the slightest pretence. One man was reported to be ailing a little. The municipal doctor came, said it was cholera, covered him all over with chloride of lime, wrapped him in a cloth, then smeared that with tar, then injected a solution of phenic acid behind his ears and into his nose. The priest was called, was sprayed with a solution of phenic acid till his robe was soaked

with it, and his beard and hair; then he was told to say the prayers for the dying. Then the man was carried off to the cholera hospital; and the next day word came that he was dead and buried.

"A few days ago, a *hamal* (porter) who had too heavy a load stopped to rest on the bridge—put off his load, put his hands to his sides and gave a groan. Naturally, he looked a little pale. In a moment a crowd gathered; then the police came and carried him to the cholera hospital, in spite of his protestations that it was his heavy load, that he was not sick. In due time his friends heard that he was dead and buried.

"The poor people are frightened, and try to conceal themselves if they are really sick. Doctors generally are having an easy time, for no one likes to have a doctor seen entering his house."

SIR JAMES SIMPSON'S EARLY EXPERIMENTS WITH CHLOROFORM.

SIR JAMES SIMPSON'S daughter has written in the *January Century* an interesting account of the introduction of chloroform in England, and of her father's early experiments in narcotic and anæsthetic drugs. She says:

"Round the table in the well-known dining-room in Dean Terrace it was his custom every evening to have an anæsthetic *séance* with Drs. Keith and Duncan. Each had a glass or saucer from which to inhale the various substances under trial. On the evening of November 4, 1847, on returning home after a weary day's labor, Dr. Simpson and his two friends sat down to their somewhat hazardous work. Having inhaled several substances without effect, it occurred to Dr. Simpson to try a small bottle of chloroform which he had had, he wrote, 'for several days in the house before trying it, as, after seeing it such a heavy and unvolatile-like liquid, I despaired of it, and went on dreaming about others.'

"The tumblers were newly charged, and the inhalers resumed their vocation. Immediately an unwonted hilarity seized the party, which became bright-eyed and very loquacious. Suddenly there was a talk of sounds being heard like those of a cotton-mill; a moment more, then all was quiet; and then a crash. On awakening, Dr. Simpson's first perception was mental: 'This is far stronger and better than ether.' His second was to note that he was prostrate on the floor, and that among the friends about him there was confusion. Hearing a noise, he turned and saw Dr. Duncan beneath a chair; his jaw had dropped, his eyes were staring, his head was bent half under him. He was quite unconscious, and snoring in a most determined manner. More noise still and much motion, and then his eyes overtook Dr. Keith's feet and legs making valorous efforts to overturn the table."

The interest in these experiments was not confined to the master of the house. The butler experimented also—only on the cook. On one occasion, finding some chloric ether in aerated water, he gave a glass of it to the cook, who, drinking it hastily, fell down unconscious. The butler rushed into the dining-room, saying, "For God's sake, sir, come down! I've pushed the cook." After the woman was restored to consciousness the man was chary and contemptuous of any other concoction, and to the end repeated stubbornly his sentiment, "Chlory's the thing."

Correspondence.

FOUR YEARS' COURSE AT RUSH MEDICAL COLLEGE.

RUSH MEDICAL COLLEGE,
MEDICAL DEPARTMENT OF LAKE FOREST UNIVERSITY.
CHICAGO, January 16, 1894.

MR. EDITOR:—My attention was called yesterday to the editorial note following the notice of the four years' course established by this college, published in your last issue.

Replying to your queries, I would say that the required annual course in Rush Medical College is eight months.

Regarding the facilities for completing a four years' course in three years,—there is no possible way whereby any under-graduate could do this; but graduates in pharmacy and dentistry, on account of their previous studies, we think would be well qualified to enter the second year in the Medical College; or graduates from dental colleges or pharmaceutical colleges requiring three full years of study, would be qualified to enter the third year of the Medical College.

Regarding graduates in arts and sciences,—we believe that they would be able to acquire as much information in the second and third years in the college as the ordinary graduate from a high school would be able to acquire in the first, second and third years; therefore, it seems to us only just to allow them this privilege. The fourth year will be the same for all; and it appears to us that it will encourage young men who wish to study medicine to make a better preliminary preparation. The schedules for recitations and lectures to these classes are so arranged that the hours do not conflict.

Hoping that this fully answers the questions which arose in your mind, I am,

Yours very truly,

E. FLETCHER INGALLS, Registrar.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 13, 1894.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Measles.	
New York . . .	1,891,806	929	385	17.28	24.96	1.32	9.00	5.48	
Chicago . . .	1,438,000	426	182	13.57	11.73	1.84	5.67	.69	
Philadelphia . . .	1,115,562	570	161	6.84	21.96	1.08	3.06	.86	
Brooklyn . . .	978,894	890	112	9.30	20.70	1.80	4.50	.80	
St. Louis . . .	550,000	—	—	—	—	—	—	—	
Boston . . .	487,887	248	67	8.80	35.80	.40	5.20	—	
Baltimore . . .	500,000	—	—	—	—	—	—	—	
Washington . . .	308,431	119	30	10.32	19.78	2.58	5.02	—	
Cincinnati . . .	305,000	123	42	9.72	17.82	4.05	5.67	—	
Cleveland . . .	290,000	63	22	15.70	10.99	3.04	7.66	—	
Pittsburg . . .	263,709	—	—	—	—	—	—	—	
Milwaukee . . .	250,000	86	39	17.40	17.40	1.16	8.12	5.80	
Nashville . . .	87,764	29	7	3.45	17.25	—	3.45	—	
Charleston . . .	65,165	39	10	2.56	7.68	—	—	—	
Portland . . .	40,000	17	1	5.88	17.64	5.88	—	—	
Worcester . . .	36,217	46	18	13.02	21.70	—	6.34	2.17	
Fall River . . .	87,411	34	19	14.70	29.40	—	11.76	—	
Lowell . . .	87,191	44	15	24.97	24.97	9.08	—	—	
Cambridge . . .	77,100	29	11	10.35	27.60	—	3.45	—	
Lynn . . .	82,656	13	—	7.69	23.07	—	—	—	
Springfield . . .	48,684	14	3	—	28.66	—	—	—	
Lawrence . . .	48,365	20	2	—	15.40	—	—	—	
New Bedford . . .	45,886	23	7	8.70	21.96	4.86	—	—	
Holyoke . . .	41,278	—	—	—	—	—	—	—	
Salem . . .	32,283	16	6	12.50	37.50	—	13.50	—	
Brookton . . .	32,140	8	1	—	12.50	—	—	—	
Haverhill . . .	31,396	12	5	—	8.33	—	—	—	
Chelsea . . .	30,264	12	5	—	41.65	—	—	—	
Malden . . .	29,394	16	3	18.75	25.00	—	12.50	—	
Newton . . .	27,556	6	0	—	16.68	—	—	—	
Fitchburg . . .	27,146	—	—	—	—	—	—	—	
Taunton . . .	26,972	26	6	7.70	23.10	—	—	—	
Gloucester . . .	26,688	7	2	14.28	14.28	14.28	—	—	
Waltham . . .	22,068	8	0	—	37.50	—	—	—	
Quincy . . .	19,642	7	2	14.28	—	—	—	—	
Pittsfield . . .	18,802	2	0	—	50.00	—	—	—	
Everett . . .	16,545	10	4	30.00	10.00	—	—	—	
Northampton . . .	16,331	7	1	—	42.84	—	—	—	
Newburyport . . .	14,073	5	0	—	—	—	—	—	
Amesbury . . .	10,920	3	1	66.66	—	—	—	—	

Deaths reported 8,883: under five years of age 1,126; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 406, acute lung diseases 714, consumption 364, diphtheria and croup 190, typhoid fever 44, measles 41, scarlet fever 38, diarrhoeal diseases 29, cerebro-spinal meningitis 24, whooping-cough 16, small-pox 13, erysipelas 7, malarial fever 4.

From scarlet fever New York 9, Chicago 7, Philadelphia 6, Boston 4, Somerville 3, Cambridge and Amesbury 2 each, Brooklyn, Cleveland, Milwaukee, Taunton and Everett 1 each. From diarrhoeal diseases New York 11, Chicago and Philadelphia 4 each, Brooklyn 3, Worcester and Lowell 2 each, Milwaukee, Charleston and Fall River 1 each. From cerebro-spinal meningitis New York 4, Chicago and Lowell 3 each, Cleveland, Pittsfield and Everett 2 each, Philadelphia, Brooklyn, Washington, Worcester, Lynn, New Bedford, Chelsea and Quincy 1 each. From whooping-cough Chicago 6, New York and Brooklyn 3 each, Philadelphia, Boston, Lowell and Taunton 1 each. From small-pox Chicago 8, New York 3, Boston and Lowell 1 each. From erysipelas New York 3, Chicago, Boston, Washington and Malden 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending December 30th, the death-rate was 22.8. Deaths reported 4,481: acute diseases of the respiratory organs (London) 516, whooping-cough 150, diphtheria 101, measles 85, fever 51, scarlet fever 49, diarrhoea 36, small-pox (Birmingham 5, Bristol and Bradford 3 each, Nottingham and Oldham 1 each) 13.

The death-rates ranged from 15.6 in Preston to 49.3 in Plymouth; Birmingham 21.3, Bolton 20.0, Brighton 27.0, Croydon 20.1, Huddersfield 19.2, Leeds 20.6, Leicester 16.7, Liverpool 26.3, London 23.3, Manchester 24.9, Newcastle-on-Tyne 20.4, Norwich 20.5, Portsmouth 17.1, Sheffield 20.0.

In the thirty-three greater towns of England and Wales with an estimated population of 10,327,846, for the week ending January 6th, the death-rate was 22.8. Deaths reported 4,667; acute diseases of the respiratory organs (London) 566, whooping-cough 166, measles 102, diphtheria 89, scarlet fever 50, fever 43, diarrhoea 32, small-pox (Birmingham 6, Bradford 3, London and Oldham 2 each) 13.

The death-rates ranged from 11.2 in Halifax to 40.3 in Plymouth; Birmingham 24.7, Bolton 16.7, Croydon 15.8, Gateshead 19.0, Hull 23.5, Leeds 16.9, Leicester 15.2, Liverpool 26.0, London 24.5, Manchester 22.6, Newcastle-on-Tyne 19.1, Nottingham 23.3, Portsmouth 17.7, Salford 22.5, Sheffield 17.9, West Ham 25.8.

METEOROLOGICAL RECORD.

For the week ending January 13, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S... 7	29.95	36	40	32	89	61	76	W.	W.	8	10	O.	O.	.00
M... 8	30.28	28	32	24	68	62	65	W.	W.	12	15	O.	O.	.00
T... 9	30.36	26	30	21	73	50	62	W.	N.W.	6	7	C.	O.	.00
W... 10	30.20	22	27	18	70	92	81	N.W.	N.W.	8	9	O.	N.	.00
T... 11	29.80	23	32	14	92	96	94	N.W.	S.	8	7	O.	N.	.00
F... 12	29.68	18	26	10	50	49	60	N.W.	N.W.	20	32	O.	O.	.00
S... 13	29.97	13	24	2	50	38	44	N.W.	N.W.	25	15	C.	O.	.00
W... 14	30.03	70	17				67							.27

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 13, 1894, TO JANUARY 19, 1894.

Leave of absence for one month, on surgeon's certificate of disability, is hereby granted to MAJOR EDWARD B. MOSELEY, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 20, 1894.

CLEMENT BIDDLE, surgeon, detached from duty, Marine Rendezvous, Philadelphia, Pa., and await orders, Rendezvous closed.

E. P. STONE, passed assistant surgeon, detached from Marine

Rendezvous, Boston, Mass., and continue on special duty in Boston, Mass.

T. A. BERRYHILL, passed assistant surgeon, authorized to take a course of instruction at the Naval Hospital, Brooklyn, N. Y.

F. J. MILLS BROWNE, medical director, retired, granted two months' leave with permission to go abroad.

SOCIETY NOTICES.

NEW YORK STATE MEDICAL ASSOCIATION, FIFTH DISTRICT BRANCH.—The tenth annual meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn, on Tuesday, May 22, 1894. All Fellows desiring to read papers will please notify

E. H. SQUIBB, M.D., Secretary, P. O. Box 760, Brooklyn.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The eighty-eighth annual meeting of the Medical Society of the State of New York will be held in the City Hall at Albany, on Tuesday, Wednesday and Thursday, February 6th, 7th and 8th. The anniversary address by the President will be given Wednesday evening, February 7th, at 8 P. M. in the Senate Chamber. The annual dinner at the Delavan House at 9.30 P. M.

HERMAN BENDELL, M.D., President.
FREDERIC C. CURTIS, M.D., Secretary, Albany.

APPOINTMENT.

EDWARD JACOB FORSTER, M.D., of Boston, has been appointed Medical Director on the staff of Brigadier-General Bridges.

RECENT DEATH.

J. G. NAVA, M.D., died in New Orleans, La., January 15th, aged sixty years. He was born in Cuba and after graduating from the University of Havana studied dentistry in Philadelphia. He then studied medicine in Paris where he received his degree in 1859. Returning to Cuba he became active in the struggle for the independence of the island and at the close of the war against Spain was obliged to leave the country as a price was set upon his head. He escaped to New Orleans where he has since lived. He was editor of *La Libertad*, a French and Spanish paper published in the interest of Cuban freedom. He was a member of the Academie des Sciences of Paris.

BOOKS AND PAMPHLETS RECEIVED.

The Nerve Theory of Menstruation. By Christopher Martin, M.B., Edin., F.R.C.S., Eng. London. 1893.

The Harvard University Catalogue, 1893-94. Cambridge, Mass.: Published by Harvard University. 1893.

A New Pathology and Treatment of Nervous Catarrh. By Seth Scott Bishop, M.D., Chicago. Reprint. 1893.

Concerning Posture. A New Holder for Sims Speculum. By B. H. Daggett, M.D., Buffalo, N. Y. Reprints. 1893.

Current Fallacies about "Nervous Prostration." Traumatic Neuroses in Court. By Dr. L. Bremer, St. Louis, Mo. Reprints. 1893.

Transactions of the Medical Association of the State of Missouri at the Thirty-sixth Annual Session held at Sedalia, Mo., May, 1893.

The Bacteriological Examination of Water and the Information it has Furnished. By Percy Frankland, Ph.D., B.Sc. (London), F.R.S. Reprint. 1894.

Proceedings of the American Microscopical Society, issued quarterly, Sixteenth Annual Meeting held at Madison, Wis., August 14, 1893. Vol. XV. Washington, D. C.; Judd & Detweiler. 1893.

Syllabus of Lectures on the Practice of Surgery arranged in Conformity with the American Text-book of Surgery. By N. Senn, M.D., Ph.D., LL.D., Chicago. Philadelphia: W. B. Saunders. 1894.

The After-Treatment of Cases of Abdominal Section. By Christopher Martin, M.B. (Edin.), F.R.C.S. (Eng.), Surgeon to the Birmingham and Midland Hospital for Women. London: Simpkin, Marshall, Hamilton Kent & Co. 1894.

The Physiology of Death from Traumatic Fever; A Study in Abdominal Surgery. By John D. Malcolm, M.B., C.M., Fellow of the Royal College of Surgeons of Edinburgh; Surgeon to the Samaritan Free Hospital. London: J. & A. Churchill. 1893.

Twelfth Annual Report of the State Board of Health of New York for 1892. Thirteenth Annual Report of the State Board of Health of New York for 1893. Maps to accompany the Thirteenth Annual Report of the State Board of Health of New York for 1893.

Original Articles.

OVARICTOMY FOR NERVOUS DISEASE.¹

BY ROBERT T. EDDES, M.D.

I DO not wish to undervalue by a thought the triumphs of that branch of our art which has made such enormous strides within the last three decades. I look upon the introduction of the principles of antiseptics or asepsis in surgery, as the only step forward at all comparable to the discovery of anæsthesia. But there may be, as has been often remarked, some disadvantages connected with the freedom from great risk; and the fact that an operation may be done with much less immediate danger to life than it would have caused twenty years ago, seems to be to some extent looked upon as a sufficient reason for doing it. I have been credibly informed that the removal of the normal ovaries is not a very difficult nor, with a reasonable degree of cleanliness, a very dangerous operation; and the history of its popularity is likely to be of greater interest to the psychologist than to the scientific surgeon who prides himself upon the knowledge and skill involved in or obtained by his operations, rather than upon the mere number of incisions or the array of specimens he can display, like the scalps hanging in the wigwag of the Indian brave.

I trust that the time has passed when normal ovariectomy can decently be urged upon a patient by a surgeon who has simply a desire to "make a record"; but I think that there is still some room for testimony as to the ultimate value of the operation from a standpoint other than that of the surgeon, who is likely to lose sight of the patient as soon as the wound has healed.

I do not pretend now to be an unprejudiced witness, though I was more nearly so a couple of years ago; but I have made up my mind decidedly as to the expediency and justifiability of removing ovaries not seriously diseased for the relief of nervous symptoms not immediately dependent upon them, and among these latter I include the so-called ovarian neuralgia or pain in the ovarian region. I have not, however, in the cases mentioned in this paper, with two exceptions, the interest of having advised either for or against the operation.

It may be admitted, moreover, that my field of observation has not been such as to furnish material for impartial statistics, since, of course, the favorable cases do not demand further treatment. I have taken some pains, however, to follow the history of a number of patients who have undergone the operation, and who have either before or afterwards been inmates of the Adams Nervine Asylum; and a few histories not immediately connected therewith.

CASE I. Miss —, physician, age forty (more or less). No signs of menopause. Had herself never suspected any disease of the pelvic organs. For some years worked very hard and anxiously, starting a dispensary and carrying it on under trying circumstances. She had been unfortunate in her domestic relations, having experienced losses, and ill-treatment of a very aggravated character. In the early summer of 1892, which was very hot, she remained at work until she went into the country to take care of a patient. There she began to lose health, and finally had

a severe fit of some kind, which seems to have been opisthotonic and was attributed by her partly to the strychnine that she was taking as a tonic. It is quite as likely, however, to have been hysterical.

In September she returned to the city, her life being considered in danger; and after three weeks in a private hospital and a consultation of several physicians, one at least of whom was far from an enthusiastic advocate of the operation in general, it was decided to remove the ovaries as a last resort. They were said to have been diseased, but I have no description of any lesion except that a cyst was mentioned. She had also a fibroid, which was not removed. She had had pains in her head and back and a defect in her vision so great as to have been spoken of as blindness. A careful ophthalmological examination revealed no visible changes. These symptoms are said to have improved after the operation, which, in a purely surgical point of view, was eminently successful. She recovered rapidly from its immediate effect, but was depressed, and her sight did not return to any useful extent.

Early in December she came under my observation. Her general condition seemed pretty fair. She had a good appetite, with only occasionally dyspeptic symptoms and usually constipation. She had at times severe pain in the back of the neck, but not often severe headache. At times attacks of "going off," in which she became bewildered and more or less delirious. On one occasion she said hundreds of little imps were saying, "Suicide, suicide," to her. Her mental condition was distinctly childish, and her attention directed almost exclusively to the history of her case, which she kept going over and over with great minuteness. Vision was much impaired. At one time she said she saw only one-half of the objects at which she was looking; but as it appeared on a little closer examination that, at one moment, the side on which she saw was opposed to that which was visible the next, the symptom lost the significance which it might otherwise have had as indicating localized cerebral disease. This mental condition grew no better, but she became more suspicious. She jumped out of a window and broke her arm, and was removed to an insane hospital, where she now is.

In a word, this case is evidently one of severe nervous break-down of the hysterical type, in which the operation, however well meant, has had no beneficial effect whatever.

CASE II. Mrs. —, teacher of music, age thirty. No children. Severe dysmenorrhœa since girlhood. In October, 1890, both ovaries were removed, there being a cyst of the right and adhesions of the left. She improved up to the next February, but entered the asylum in July, remaining until the subsequent June. During this time she gained about seventeen pounds in weight. She menstruated at irregular intervals, and with much suffering, though, as she states, less than she had experienced before. She complained chiefly of weakness, and inability to make any exertion without feeling it greatly. There was no mental affection. She has been heard from at various times, nearly up to the present, as having made no essential improvement.

CASE III. Miss —, age twenty. Was in the asylum in 1881 with severe hysteria and ovarian pain. Was operated on two or three years later. The operation was considered a success surgically, and "so far

¹ Read (in part) to the Dorchester Medical Club and to the Roxbury Society for Medical Improvement.

as nerves were concerned." Became a morphinist. Died two or three years ago.

CASE IV. Mrs. —. In asylum in 1881. Soon after went to a private hospital, where she was operated on. She afterwards brought a suit against the hospital and against the surgeon. Presumably, the surgeon, at least, would not be willing to give a very favorable opinion as to state of her mind from the side of morality.

CASE V. Mrs. —, age thirty-four. At asylum in 1884. Moody soon after operated on. Ovaries not diseased, but badly prolapsed. Is said to have been "in a wretched state of health ever since, a chronic nervous invalid."

CASE VI. Miss —, age thirty. Was in the asylum in 1887. Was operated on a few years later. Was an invalid until she died of an overdose of cocaine. The ovaries were normal. The autopsy revealed nothing abnormal in any part of the body.

CASE VII. Mrs. —. In asylum in 1888. Operated on later. Recent information represents her as a confirmed invalid.

CASE VIII. Miss —, age thirty-seven. Was sick twelve years, "though no one knew it." In asylum in 1889. Had been operated on two months previously, the cirrhotic ovaries and a cyst of the broad ligament having been removed. Acted strangely all the time she was in the asylum. The records show a long list of hypnotics and nervines. Has since grown fleshy, but by no means strong. Still (1892) suffers *pain in region of right ovary*. In December, 1893, she was said to have been very much better during the preceding six or eight months. Has done considerable work.

CASE IX. Miss —, age twenty-nine. Dysmenorrhœa. Both ovaries, "without pathological change," were removed together with the tubes. Came to the asylum to recover from the effects. Took a great deal of morphine. Her physician writes in 1892: "She has gained slowly but steadily for two years. If she gains as much during the next year as she has done during the last, she will be pretty comfortable." She now (1893) has the old menstrual pain twice a month, requiring morphine, and "menstruates occasionally, wasting as much as those who flow the most."

CASE X. Miss —, age twenty-nine. Was in the asylum in 1882 and 1883. After an absence of nine months she returned to the same, minus her ovaries. The ovaries were enlarged and imbedded in inflammatory exudation. Nervous and hysterical, saying that she had a misplaced womb. Pains in back and bladder. Menstruated. For several years was unable to work, but at last accounts was teaching in the South.

CASE XI. Mrs. —, age forty. In the asylum in 1884. Overwork, neurasthenia, irregular menstruation, dysmenorrhœa. "Both ovaries were removed in 1885. They were much enlarged and badly diseased. The results of the operation were good, and she has since been in a fair condition of health. For the past five years she has had charge of the management of some kind of institution for ladies."

CASE XII. Miss —, age twenty-seven. Was in the asylum in 1888, nervously prostrated, with no organic trouble. In 1892, having had her ovaries (which were cystic, hard and adherent) removed two years previously, she applied for readmission having been of late profoundly neurasthenic and losing flesh

rapidly. In 1893 her "symptoms had somewhat diminished in intensity by operation, but the character of them had not been changed, except that the abdominal pain of which she complained so bitterly is now a factor of little importance."

CASE XIII. In 1892 application was made for the admission of a married woman, age thirty-four, with neurasthenia and adynamia for more than a year. Her uterine appendages were extirpated a little more than two years before, with "improvement in some directions."

CASE XIV. Another applicant (married, age forty-three) has lately had her ovaries removed, and is now suffering from the shock of the operation.

CASE XV. Another application from a patient who had had the uterus and ovaries removed. Was probably in a condition of incipient melancholia.

CASE XVI. Mrs. —, age thirty-seven. Was at the asylum in 1888, a few months after having had her ovaries and tubes removed. There had been a long history of pelvic inflammation, and the organs were diseased and adherent. She never fully recovered from the nervous shock, but some of the symptoms were slightly relieved by the operation. At the time of her entry, her physician stated that she had been suffering many of the ills of the change of life. She herself said in September that she had had pelvic peritonitis three times since April.

CASE XVII. Miss —, age thirty-three. Was in the asylum in 1890, with neurasthenia, depression, headache, spinal tenderness and too frequent but scanty menstruation. Her cystic ovaries were removed; and her physician states that she is not much improved as to her neurasthenia, perhaps a little. Certain local symptoms are better.

CASE XVIII. Miss —, age thirty. Never well since seven. Lost eyesight at that time. Diphtheria with paralysis at the age of fourteen. A cyst of one ovary removed four years ago, the other ovary one year ago. Uterus stitched to the abdominal wall. She now enters the asylum for neurasthenia, and has made little, if any, improvement.

CASE XIX. Mrs. —, age forty. Invalid for nine years. Nervous at menstrual epochs. Apparently some metritis. Discharged from Adams Nervine Asylum somewhat benefited. After remaining in bed for more than three years longer, her healthy ovaries were removed. "She made an uneventful recovery from the operation; and since then she has been a well woman," doing her own work, making calls and so on.

CASE XX. Miss —, age twenty-nine. Severe dysmenorrhœa and hysteria. Dilatation of cervix without relief. Remained in the Adams Asylum over ten months. Upon her own decision both ovaries were removed on November 2d. They showed some degree of cystic degeneration. There was no local trouble afterward; but she fell into a condition of "stuporous melancholia," and died on November 9th. The autopsy showed absolutely nothing abnormal.²

CASES NOT OPERATED ON.

CASE A. Mrs. —. Four children. An anxious mother, nervous, with profuse menstruation amounting nearly to menorrhagia. She was seen by a physi-

² Since the MS. of the above left my hands, another case has applied, both of whose diseased ovaries were removed in October of November. "She does not rally from the operation . . . and in my opinion a few weeks of rest and freedom from care will enable her again to become self supporting." Would that our experience enabled us to share in her physician's hopeful view!

cian (who now figures as Case I on my list), who, with another lady called in consultation, was anxious for the operation. Mrs. —, at my request, visited another well-known surgeon, who, without absolutely declining the operation, spoke so doubtfully of its probable benefits that she concluded to wait. In the mean time circumstances having prevented anything from being done immediately, nothing was done at all. She now for some reason or other, perhaps from a dearth of medical attendance, for a portion of which I was responsible, is very much better, and retains all her pelvic viscera.

CASE B. Miss —, age thirty-six. Chronic intestinal catarrh for eight years. Abdominal neuralgia for six years. Tingling, numbness, and pain all over body, but especially in extremities. At the urgent request of the patient and somewhat against his own judgment, an abdominal incision was made by a well-known gynecologist; and nothing wrong being found, with praiseworthy self-denial, he declined to remove anything. The moral effect boasted of in these cases did not ensue; but a new anxiety was added to the former symptoms, that is, that adhesions might have taken place which were the cause of the additional pains, now constantly located in the neighborhood of the incision, which she was willing to have repeated on the chance of relief.

CASE C. Mrs. —, age thirty-one. Two children. Has suffered much at the hands of the general practitioner and gynecologist. Entered the asylum with severe abdominal pains. A tumor of a Fallopian tube had been diagnosed and an operation planned. In the absence of the first surgeon, and (on account of fever) the operation being considered urgent, it was done by another. Nothing whatever was found in the tube. The second surgeon told me that he thought it more probable that there had been an accumulation of serum which had escaped into the abdominal cavity (there having been no gush from the uterus) than that the first surgeon had been mistaken in his diagnosis. This is a point on which there appears to me to be room for two opinions. After recovery from this operation the pains remained as before. A year after much better.

These cases were collected with the object of throwing light upon this operation solely from a neurological point of view. The removal of the pelvic organs for surgical reasons is an entirely different matter, although, of course, there may be cases which involve both. I believe that in these the surgical considerations should predominate; and in proportion as nervous symptoms can be clearly shown to depend upon definite lesions of a character which are not likely to recover without an operation, just so increases the justifiability thereof. Unfortunately, we cannot say so much for the prospect of a cure. There are two, possibly more, cases in this list of this character (Nos. X and XVI). For others, where the ovaries are healthy, or nearly so, as far as can be ascertained without removing them, the operation finds but little support from this series, which is to be regarded, however, as consisting of illustrations rather than as making an important addition to statistics already perhaps sufficiently numerous and decisive. The list of five thus marked furnishes the only complete and decisive recovery apparently due to the operation (No. XIX), one invalid still suffering from dysmenorrhœa, one death from cocaine, one death from

the operation, and one case of apparently hopeless insanity. The nine cases in the second and third columns give eight invalids, one of whom is able to do a little work, and one teaching after some further years of invalidism.

It would have been easy to add dozens if not hundreds of cases from the literature of the last few years; but the truth is not to be sought in the reports of operations called "successful" because the wound has closed without unfavorable local conditions. Then, indeed, they do appear in a more favorable guise, being discharged perhaps as "needing only rest and feeding" to complete the cure, until they are again found in the beds of hospital after hospital or doomed for years, if not for life, to the reclining-chair of the chronic invalid.

SUMMARY OF CASES OPERATED ON.

Cases.	Normal Slightly Cystic.	Cystic and Indurated.	Old Inflammatory Adhesions.	Unknown.	Results.
1	×				Insane.
2		×			Chronic invalid. Menstruated with pain (two years ago).
3			×		Died after some years of invalidism of chronic morphia, pulmonary tuberculosis, and necrosis of spine from an accident.
4			×		?
5		×			Chronic invalid.
6	×				Chronic invalid. Death by cocaine.
7			×		Chronic invalid.
8		×			Chronic invalid.
9	×				Invalid. Improving slowly. Menstruates with pain.
10			×		Invalid some years. Now teaching.
11				×	Fair health.
12		×			Invalid. Does some work.
13				×	Invalid.
14				×	Invalid.
15				×	Melancholia?
16			×		Invalid.
17		×			Invalid.
18		×			Invalid.
19	×				Well woman.
20	×				Died a week after operation.

REMARKS ON DIPHTHERIA.¹

BY J. H. MCCOLLUM, M.D., BOSTON.

THE marked prevalence of diphtheria in this city is sufficient reason for an investigation of the prevalence of mild cases of the disease, which are not recognized, and which, therefore, become sources of infection. It is a well-recognized fact that a mild case of any infectious disease is a greater source of danger to the public health than the severer cases. There are many instances in which the local manifestations of diphtheria are so slight that it is impossible to arrive at a positive diagnosis without a bacteriological investigation.

Since 1878, when there were 1,370 cases, the fre-

¹ Read at the meeting of the Boston Society for Medical Observation, November 6, 1893.

quency of the disease has varied from 1,814 cases in 1889 to 831 cases in 1891. The greatest number of cases reported was in 1889, when the number reached 1,814, with 564 deaths. The smallest number of cases was in 1891, when the number was 831, with 282 deaths. Last year, 1892, the number of cases was considerably greater, being 1,353, with 414 deaths. The percentage of deaths to the number of reported cases since 1878 has ranged from 35.7 to 26.44. For the decade from 1883 to 1892, the average percentage to the number of cases has been 29.42.

An analysis of twenty-five of the principal causes of death in this city for 1892 shows that diphtheria is the seventh on the list; and this comparative frequency, with certain slight variations, has existed for the past ten years. In other words, diphtheria causes more deaths than any of the other infectious diseases. For the last ten years, ending with 1892, the percentage of deaths from this disease to the total mortality has ranged from 5.50 in 1889 to 2.19 in 1891, with an average for the same period of 3.82. A study of the cases reported, by months, for the past five years shows that in the summer months, during vacation time, there is a marked diminution in the frequency of the disease as compared with term time. An analysis of the ratio of cases of diphtheria to the thousand of population in each ward of the city, for the five years from 1888 to 1892, shows that neither elevation above mean low water nor a crowded condition of a locality are important factors in causing the prevalence of the disease.

In view of the fact that diphtheria is so much more prevalent when the public schools are in session, and also that situation with reference to tide level and a crowded condition of a locality do not have any marked influence on the frequency of the disease, it is evident that contagion from the mild and unrecognized attacks is a potent factor in causing its spread.

With a view of discovering the actual number of mild cases, Professor H. C. Ernst has instituted a series of bacteriological investigations. It is now universally conceded that the Klebs-Löffler bacillus is the cause of diphtheria, and that by suitable methods of observation it can always be demonstrated by a microscopical examination of cultures from the false membrane found on mucous surfaces. The importance of these investigations, not only to the well-being of the public, but also to the advancement of medical science, cannot be overestimated. The investigation of severe cases of sore throat has been carried on in a great many instances; but the investigation of mild cases, such as are more likely to occur in private practice, has not been conducted to any considerable extent. While it may be said that a bacillus morphologically similar to the Klebs-Löffler bacillus has been found in the throats of persons apparently well, yet this bacillus cannot materially affect the correctness of the diagnosis any more than can the Deneke cheese spirillum affect the accuracy of bacteriological examinations in cases of cholera, for it is now generally conceded by the best observers that this bacillus is an attenuated form of the Klebs-Löffler bacillus, and differs from it only in virulence.

The case which is to be used in the investigations offered you by the Bacteriological Department of the Harvard Medical School contains two test-tubes partially filled with blood-serum, two platinum needles, two cover-glasses and labels. The tubes are to be inoculated at the bedside of the patient by taking a small

portion of the false membrane on the point of one of the platinum needles and making one distinct streak on the right of the culture medium, one in the centre, and one on the left. The object of this is to get the necessary amount of dilution, so that the streak on the left may have distinct colonies, which may be easily isolated for the purpose of microscopical examination. A small portion of the membrane should also be placed in the centre of one of the cover-glasses. The other cover-glass should be placed upon it, and the two rubbed together for a few moments, in order to render the layer as thin as possible. The cover-glasses should then be separated and allowed to dry in the air for a few minutes. They should then be placed with their smeared sides together, put in the paper box in the case, which, with the inoculated tubes, should be sent to the laboratory, where the tubes will be placed in the incubator for twenty-four hours. At the end of that time, if the inoculation has been successful, a growth having the form of minute, rounded colonies, or of larger white colonies, will be evident.

Cover-glasses are made from these growths by staining with Löffler's solution; and these, together with the cover-glasses prepared at the bedside of the patient, stained in a similar manner, are examined by the microscope. If the Klebs-Löffler bacillus is found it is evident that the case is one of diphtheria, and the requisite treatment can be adopted and the proper amount of isolation enforced. If, on the other hand, small, round organisms, known as cocci, are seen under the microscope, it is evident that the patient is suffering from tonsillitis or from some other form of non-infectious throat disease. To those of us who have so many times been in doubt regarding the nature of the disease of the throat in mild cases, these bacteriological investigations will be of great value. If it were possible to carry out these investigations in the public schools, while we might not hope to absolutely stamp out the diphtheria, it is perfectly evident to any one who has studied the subject that the disease would be diminished in frequency to a marked degree.

A second object of this investigation, which is in a measure dependent upon the first, is to show how many cases there are of diphtheria associated with scarlet fever. This is of interest not only from a scientific point of view, but also is of importance regarding prognosis and treatment. A similar remark is true regarding diphtheria and measles. In many cases it is absolutely impossible, without a bacteriological investigation, to say definitely that a false membrane appearing in the throat in the course of scarlet fever and of measles is caused by the presence of the Klebs-Löffler bacillus, or is due to some change caused by the poison of scarlet fever and of measles.

A third object, although not directly connected with mild cases of sore throat, but of great scientific interest, is to show whether the false membrane that is observed in cases of puerperal septicemia is a true diphtheritic membrane, or whether it is caused by other organisms.

In Bulletin No. 4 of the Harvard Medical School Association, in an extremely valuable article on diphtheria, Dr. A. L. Mason says that of the 759 cases admitted to the City Hospital from July, 1890, to January, 1893, 113 cases of non-diphtheritic tonsillitis and laryngitis were sent to the City Hospital as diphtheria, or about 15 per cent. It must be borne in mind, however, that these were severe cases, in which the diag-

nosis, although difficult and in many cases impossible without a bacteriological examination, do not present such a difficult problem as do the milder cases, which, as a rule, are not sent to the hospital. This is only another argument in support of the importance of the proposed investigation which has been explained in detail.

Abbott, in 1891, published the result of his bacteriological investigations in 53 cases of mild sore throat. Of these 53 patients, 9 were found to be suffering from acute pharyngitis, 14 from acute follicular tonsillitis, 8 from ordinary post-nasal catarrh, 2 from simple enlarged tonsils, 15 from chronic pharyngitis, 1 from sub-acute laryngitis, 1 from chronic laryngitis, 1 from rhinitis, and 2 from an affection of the tonsils and pharynx. In only 4 of the 53 cases was an organism found that resembled the Klebs-Löffler bacillus. This investigation is of great interest as showing that the pseudo-diphtheritic bacillus is not a great source of error.

A word might be said regarding the degree of isolation in a case of diphtheria. Although the disease is contagious to a certain extent, it is not nearly so contagious as scarlet fever and small-pox in the unvaccinated. Actual contact with the patient or with the discharges from the mouth and nose are necessary in order to contract diphtheria. Provided that a person does not enter the room of the patient, or does not come in contact with clothing, linen and more particularly handkerchiefs soiled by the discharges, there is very little danger of contracting the disease. Dr. Mason says, in the article to which allusion has been made, that of the twenty-three cases admitted to the diphtheria ward and recorded as doubtful, although isolation was only limited, not one of the number contracted the disease.

In the *Philadelphia Medical News* of December 10, 1892, Wyatt Johnston, of Montreal, has suggested a ready method for the diagnosis of diphtheria. It consists in boiling an egg hard, and then chipping off a small portion of the shell, which, of course, lays bare the albuminous portion of the egg. This exposed surface can then be inoculated with a portion of the false membrane from the throat. The egg can then be inverted in an ordinary egg-glass and put in a warm place over night. If the inoculation has been successful there will be a growth on the exposed surface of the egg, which can be examined by the usual methods. The only objection to this method is the fact that the sterilization cannot be so effective as when tubes of blood-serum, properly prepared, are used; but this remark is not intended to militate in the slightest degree against the value of this device in those cases where it is impossible to obtain other culture media.

The bacillus of diphtheria may retain its vitality for months. Recent experiments prove that the dried diphtheritic membrane in small fragments has retained its vitality for nine weeks, and in larger fragments for from twelve to fourteen weeks. Welch and Abbott, from their investigations, have found that the thermal death-point of this organism is 58° C., 138° F. Löffler previously found that this bacillus did not survive exposure half an hour to 60° C.

With regard to the use of disinfectants, the experiments of Boer prove that in bouillon cultures of the diphtheria bacillus twenty-four hours old, after an exposure of two hours in a solution of carbolic acid, one part to three hundred, this organism was killed.

Recent experiments show that a solution of the mercuric chloride, one part to a thousand, and an exposure for half an hour, caused the death of this organism.

It has been attempted in this brief paper to outline the method of this investigation, and also to call the attention of the members of this Society to its importance. As the number of cases examined thus far has been small, no definite results have been reached, except in individual instances.

A CASE OF MULTIPLE RUPTURE OF INTERNAL ORGANS PRODUCED BY A FALL.¹

BY W. T. COUNCILMAN, M.D.,

Pathologist to the Boston City Hospital; Shattuck Professor Pathological Anatomy, Harvard University.

THE patient, a laborer, was brought into the hospital for injuries sustained in a fall from a roof. There had been a very severe snow-storm and the man had been engaged in cleaning off the snow from a roof. He fell to the ground, bringing with him a large amount of snow. The height of the roof was somewhat under twenty-five feet. No previous history could be obtained from the men who brought him in. On physical examination the pulse was weak and somewhat fluttering. Pupils of equal size. Knee-jerk increased. The man was very noisy and hyperæsthetic. No definite external bruise could be seen, and no localized tenderness was made out. A few hours later the man became quiet and unconscious. The next day the patient was still unconscious; the diagnosis was made of right meningeal hæmorrhage, and a button of bone taken out. There was a considerable escape of clear, watery fluid from the opening. No hæmorrhage to be made out. The pulse was very weak at the time of operation, and numerous subcutaneous injections of brandy and digitalis were given. The pulse became somewhat stronger. Later the pulse gradually grew weaker, respiration became slower and slower, and death took place at 6.30 P. M., thirty hours after the injury. After death information was obtained from a friend of the man that he had been previously subject to periods of insanity, which in some cases were of a violent character.

AUTOPSY (TWENTY-FOUR HOURS AFTER DEATH).

The body is that of a large, strongly-built, muscular man. On the right side of the head there is a crescentic-shaped incision, commencing close behind the left ear and extending upwards and forwards, terminating over upper portion of the frontal bone. On the posterior surface of the thorax on the right side there is a large, subcutaneous hæmorrhage, evidently due to contusion. No evidence of injury elsewhere.

In the right side of the skull, corresponding to the incision through the scalp, there is a round opening with smooth edges, the anterior portion of which is one centimetre posterior to the middle meningeal artery. The dura at this point has been opened. The calvarium smooth. No evidence of fracture. The dura is thickened and slightly adherent to calvarium. The thickening is more marked on the right side. On the inner surface of the dura, on the right side, there is a slight membranous formation, which can easily be stripped off, and in which numerous small hæmorrhages are seen and points of brownish

¹ A contribution to the forthcoming Medical and Surgical Report of the Boston City Hospital.

pigmentation. There are several foci of softening on the right side of the brain. These are more marked in the temporal region than elsewhere. The largest of these is in the first temporal convolution. It is three centimetres long, with irregular edges and quite superficial. The base is smooth and firm. The edges are yellow and sharply defined. At no place does the loss of substance extend more than three millimetres into the brain. There are similar but smaller losses of substance in the second and third temporal convolutions, and a very small one in the angular gyrus just above the fissure of Sylvius. There is also an area which is yellowish and slightly softened in the anterior central convolution opposite the second frontal involving a portion of the cortex one centimetre in diameter. The pia is of ordinary thickness, easily stripped off. The vessels at base of brain and throughout brain, perfectly normal. No pathological condition is made out within the brain itself. The base of skull shows no change. The ears and drum membranes perfectly intact.

The subcutaneous fat is slightly developed; muscles red. The peritoneum is smooth, and its entire posterior surface is elevated by an extensive hæmorrhage beneath it, giving to it a dark, almost black color.

Liver and spleen free from adhesions. Diaphragm on right side at lower margin of fourth rib; on left, at fifth intercostal space.

Both lungs are voluminous; the left free from adhesions. The pleura smooth. The entire posterior portion of left lung and the entire lower lobe are intensely congested and show numerous areas of hæmorrhage, which in part are small and circumscribed and in part form large irregular areas which are evidently due to confluence of the smaller. These areas are somewhat similar to areas of broncho-pneumonia, and are in connection with the bronchi. The blood-vessels of the lung are normal. In the bronchi there is a small amount of mucus mixed with blood. In addition to the areas of hæmorrhage, the entire lung is somewhat oedematous. The most congested portion of the lower lobe floats in water. The parietal pleura along the vertebræ is congested, and there is an infiltration of blood beneath it.

The right lung shows a few old and tolerably firm adhesions, which are most marked along the lateral surface of the lung. Almost the entire sub-pleural tissue of the wall of the thorax on this side is infiltrated with blood. This is most marked along the posterior surface, and extends from this around the apex of the thorax and down to the diaphragm, gradually becoming less in extent. There is no blood within the pleural cavity. The entire right lung is heavy and voluminous. The entire lower lobe, especially the posterior portion, is dark and hæmorrhagic. In one or two places the pleura is slightly elevated, apparently from hæmorrhage beneath it. Over the entire lung the pleura is perfectly smooth, with the exception of the places corresponding to the attachment of the old adhesions, and shows no rent or fissure. A section through the posterior surface of the lower lobe shows an extensive, irregular cavity filled with blood. The cavity is six centimetres long, and represents a long, irregular fissure of the lung, with lateral fissures radiating out from it. In several places it is immediately beneath the pleura, and the pleura in this place is separated from the lung by a mass of blood-clot which communicates with the cavity. The cavity contains

about fifty cubic centimetres of dark, clotted blood. The wall of the cavity, though irregular, is comparatively smooth. It does not represent a definite loss of substance in the lung; and on removing the coagulated blood contained within it, the walls of the cavity come into perfect apposition. The hæmorrhage here extends over the entire posterior part of the lower lobe. The lung is solid and sinks in water. Elsewhere there are smaller and more circumscribed hæmorrhages. The vessels of the lung are normal. No single, large vessel can be traced into the cavity. The cavity connects with the bronchi in several places. Elsewhere in the lung there is a slight amount of oedema.

Both layers of pericardium smooth. On the left ventricle, just at the juncture of the ventricle with the auricle, there is a large ecchymosis beneath the pericardium. The heart of ordinary size and weight. Firmly contracted. All of the valves of the heart normal. Coronary arteries normal. In the left side of the heart there is a firm mural thrombus two centimetres in diameter, which is attached to the auricle and the mitral valve at its ring of insertion. It is attached just above the middle of the aortic segment of the valve. On removal of the thrombus, it is found attached to a fissure in the endocardium of the auricle, which commences in the auricle just above the valve and extends downward into the valve. This fissure is one centimetre in length, and corresponds to the situation of the sub-pericardial hæmorrhage. The papillary muscle corresponding to this place also shows small fissures at the insertion of the cordæ tendinæ, with hæmorrhagic infiltration of the myocardium about them. These fissures are covered with a thrombus. The aorta is smooth.

The intestines are somewhat distended with gas, and are hyperæmic. The mucous membrane of the entire intestinal canal normal.

The entire posterior peritoneum is elevated by an extensive hæmorrhagic infiltration beneath it. This infiltration is more marked in the lower portion of the peritoneal cavity extending into the pelvis, and is more on the right than on the left side.

The spleen of normal size and consistency.

The liver large, rather pale and anæmic. The peritoneal surface smooth, the lobules visible. The gall-bladder contains rather thin, yellowish bile; the bile-ducts open.

Pancreas and adrenal glands normal.

The right kidney has an extensive hæmorrhagic infiltration around it. Its capsule is loose, and elevated by the hæmorrhage. There are numerous irregular fissures on both sides of the kidney; and in the middle there is a large fissure with an interval of one to two millimetres between the edges, which is filled with coagulated blood. Most of the fissures do not extend into the kidney for a distance of more than one to five millimetres, and none of them communicate with the pelvis. On section, there is a hæmorrhagic infiltration in the neighborhood of the fissures. Elsewhere the kidney is pale. About the left kidney there is also an extensive hæmorrhagic infiltration of the perirenal tissue. The surface of left kidney is smooth and free from adhesions. The capsule of the left kidney is slightly elevated above the surface. On section, the entire organ is distinctly congested, and blood can be pressed from the cut surface everywhere. The renal artery is occluded by a thrombus which ex-

tends up to the aorta. The renal vein is also thrombosed.

Both adrenal glands are imbedded in the hæmorrhagic infiltrated tissue. The pancreas shows no change. The urinary bladder and genitalia are normal.

The most careful examination showed no fracture of the walls of the thorax nor of the pelvis nor vertebrae. No fractured bone could be found in any portion of the body.

ANATOMICAL DIAGNOSIS.

Traumatic rupture of the right lung, heart and kidney. Pulmonary hæmorrhage from rupture. Thrombosis of heart. Sub-pleural, sub-peritoneal hæmorrhage from rupture. Embolus of left renal artery. Thrombosis of renal vein. Hæmorrhagic infarction of left kidney. Operation wound in scalp and skull. Old areas of softening in brain. Chronic pachymeningitis.

This case is in many respects an exceedingly interesting one. Although there are many cases reported of rupture of the lung and other internal organs without injury of external parts which would correspond with them, I have found no case in which the injuries of the viscera were so extensive. Most of the cases of rupture of the lung without injury of the thorax which have been reported have been due to direct violence applied to the wall of the thorax. The most frequent cases are those in which a wheel has passed over the thorax, or in which the thorax has received a violent blow. Cases have also been reported in military surgery of injury to the lung, sometimes followed by gangrene, from the effect produced by a spent cannon-ball striking the thorax. In all of these cases it has been assumed that the thorax was in a condition of extreme distention at the time of the injury, and the glottis firmly closed.

The man in this case fell from a height of less than twenty-five feet, bringing a lot of snow down with him. It could not be ascertained whether the contusion of the thorax was due to his having fallen on a projecting body. It is interesting to see that the rupture of the lung had been produced without any injury to the pleura over it. The hæmorrhagic infiltration extended over the rupture to the base of the lung, and from here on all sides, still beneath the pleura. There was no blood at all in the thoracic cavity. A close examination failed to show the rupture of any large vessel in the lung.

It is hardly possible to conceive that there should have been a rupture of one of the pulmonary vessels which had caused the destruction of the lung tissue. The case would have been more easily explained had there been numerous adhesions between the chest wall and the lung, but the adhesions in this case were almost entirely wanting. It is still more difficult to explain the rupture of the endocardium, and I have not been able to find the report of an analogous case in the entire literature. It is hardly possible to conceive of such a sudden increase of intra-thoracic pressure combined with intra-cardiac pressure which could produce such an injury. It would be more easily accounted for by a diminished intra-thoracic pressure combined with an increased intra-cardiac. There was an entire absence of any disease of the valve or of the endocardium which would have made the liability of

injury greater. The blood-vessels in the body everywhere were normal.

When we think of the anatomical structure and the situation of the organs in the thorax, it is difficult to understand how, in such an elastic tissue as the lung, an injury could take place as the effect of indirect violence. A consolidated lung is, of course, easily torn, because, owing to the inability of the lung to collapse, any violence applied to it only acts on a small portion of the tissue at a time. But here there was no evidence of there having been any previous consolidation. How the injury of the heart took place we have no means of knowing.

The rupture of the kidney is more easily understood, and cases are not uncommon of rupture of the kidney which have resulted from various forms of external injury. I know of one case in which a man fell from the roof of an omnibus, and, striking on the right shoulder, rupture of both liver and kidney took place. It is probable that the thrombus of the left renal vein was due to the injury of the tissues around the vein produced by the infiltrated blood. The embolus which plugged up the artery on the same side had evidently come from the thrombus in the left heart. That infarction of the kidney should have taken place after closure of both renal artery and vein is a direct confirmation of Litten's experiment. In Conheim's explanation of infarction after the closure of an artery, he assumes that the blood in the infarcted territory comes from a backward flow from the veins. Litten afterwards showed that the infarction took place when both vein and artery were tied, the blood entering into the tissue from the anastomosing vessels of the capsule and from the vessels along the course of the ureter. No infarction followed the ligation of the artery and vein when the capsule was stripped from the kidney and the ureter tied.

A REVIEW OF NINETY-TWO CASES OF DISEASES OF THE HEART OBSERVED IN THE OUT-PATIENT DEPARTMENT OF THE BOSTON CITY HOSPITAL.¹

BY HENRY JACKSON, M.D.,
Physician to Out-Patients.

MANY cases present themselves for diagnosis and treatment in an out-patient clinic with symptoms suggestive of some disturbance of the circulation, as dyspnoea, cough, œdema, or inability to work, in whom the diagnosis may be more or less difficult. Many of the difficulties may be removed if the physician directs his attention to a careful consideration of the size of the heart, to the relative proportion of the cavities and the muscular tissues of the heart, to its regularity of action and force, rather than to the presence or absence of endocardial murmurs. Again, many cases are found to have some disease of the heart, more often valvular, but occasionally of the substance of the heart which present no symptoms of such trouble, and in which a careful examination of the history may not elicit any symptom suggestive of cardiac trouble. As a matter of fact, a valvular lesion in itself gives rise to no untoward symptoms, causes no inconvenience to the individual, until as a result of the pathological change, of the incompetency of the affected valve, the heart be-

¹ A contribution to the forthcoming Medical and Surgical Report of the Boston City Hospital.

comes so dilated and the muscular tissues so weakened that it is no longer capable of supplying the system with properly oxygenated blood. During the stage of compensatory hypertrophy, as long as the defect in the valve is overcome by the increase in the muscular force, the disease is not suspected by the patient, and a diagnosis of the condition is made only by chance. Practically, from a therapeutic standpoint we do not treat the valvular lesion, but can help our patient only in so far as we are able to assist the heart to overcome the difficulties dependent upon the defect of the valve.

Clinically, disease of the heart may be divided into three essential classes: valvular, dilatation and hypertrophy, functional. Aside from the cases of dilatation or hypertrophy of the heart dependent upon valvular lesions, many cases are observed in which it is difficult and often impossible to determine the etiology during life. From some cause or other the muscular substance becomes weakened, and secondarily there follows a gradual enlargement of the cavities, with diminution in the thickness of the walls. The dilatation may be dependent upon fatty degeneration, fatty overgrowth (infiltration), some disease of the myocardium dependent upon obstruction of the coronary arteries, or may be met with as the result of prolonged overwork or alcoholic abuse. Again, the enlargement may be dependent upon arterio-sclerosis or renal disease.

The nomenclature of these various conditions is unsatisfactory; it cannot be based upon a probable pathological process, as in most cases this cannot be determined during life. In hospital records such cases are often entered as "Cardiac" or "Heart," etc.; and many death-certificates signed "Heart failure" might be more properly characterized as dilatation of the heart. It seems to me that the term "parietal disease of the heart," suggested by Dr. W. W. Gannett in a paper read before the Clinical Section of the Suffolk District Medical Society in March, 1893, is applicable to a large number of such cases. It expresses tersely and exactly the condition of the heart without committing one to an opinion as to the cause of the difficulty.

During two services of four months each, the one in the summer and the other in the spring, 92 cases were seen in which the heart was principally or only at fault as a cause of the symptoms complained of.

In 48 cases no valvular lesion was found as a factor in the production of the heart trouble; and these may, I think, be properly classified as "parietal disease of the heart." In these cases the diagnosis of some disease of the muscular substance of the heart was based upon a modification of the size of the heart, together with more or less disturbance in its action, as determined by enfeebled action, increase of rate, irregularity in rate or rhythm, or intermittency. Undoubtedly, in a certain proportion of these cases post-mortem examination would show some valvular disease. Further, in certain cases a first sound that I describe as short and valvular, would by some observers be considered as accompanied by a murmur; but in none of the cases was there a murmur defined in character, or localized with sufficient accuracy to warrant the diagnosis of a specific valvular lesion.

Five of the cases were classified as functional. In all the symptoms were palpitation and pain in the cardiac region; one, a man, said he "was afraid to work on account of his heart." In three, excess in tea, and in two, excess in tobacco, was assigned as the cause of the trouble. Two were young men of eighteen, and

three young women. In all these cases physical examination showed a rapidity of action, but no modification in the size of the heart or in the strength of the pulsations. The diagnosis of "functional disease" may here, as in so many other cases, be merely a mask to cover our ignorance as to some hitherto unexplained pathological change; but at the present time we can only assume some disturbance of the nerves regulating the action of the heart, as we have no evidence of any other pathological condition. In 39 cases there was some valvular defect.

The large proportion of cases of some heart trouble which present no evidence of valvular lesion shows us the importance of a careful consideration of the diseases of the parietes of the heart; a classification of the symptoms presented by such cases is interesting; and a uniform nomenclature, if obtainable, is certainly desirable.

FORTY-EIGHT CASES OF PARIETAL DISEASE OF THE HEART.

Thirty-six were men, ten were women, and two boys (aged respectively six and ten years). One of the boys had just recovered from diphtheria, and came in with a complaint of pain in the chest and palpitation. Examination showed an enlargement of the heart; the apex was outside the line of the nipple; the pulmonic second sound was accentuated; there was a slight soft systolic murmur, not transmitted, heard at the base. Here a diagnosis of fatty degeneration might be with propriety considered. The other boy, ten years of age, complained of loss of flesh, general debility and poor appetite; he had never been strong. Examination showed an enlargement of the heart; the apex was just within the line of the nipple, and the action was violent. Though no murmur was present, congenital deformity was suspected, though impossible of diagnosis. The age of the other cases was as follows:

9 cases, 30 to 40 years.
13 cases, 40 to 50 years.
7 cases, 50 to 60 years.
10 cases, 60 to 70 years.
5 cases, 70 to 80 years.

Where noted, the symptoms which caused the patients to apply for relief had existed for the following periods:

12 cases, 3 to 4 years.
9 cases, 1 to 2 years.
7 cases, several weeks.
9 cases, several months.
2 cases, 10 and 14 years respectively.

Seven cases were seen which presented no symptoms referable to the heart, but came in on account of some general disease; as one for herpes zoster, a second on account of a mastoid abscess, a third for some trouble with the eyes.

The symptoms complained of were as follows:

16 cases, pain in the chest, sometimes referred to the region of the heart, more often not localized.
22 cases, dyspnoea or shortness of breath.
7 cases, cough.
8 cases, palpitation.
4 cases, dizziness.
4 cases, general weakness.
2 cases, sudden attacks of faintness.
7 cases, cedema.

The most frequent and prominent symptoms were dyspnoea and distress, or sharply-defined pain in the chest, symptoms which in many instances have existed

for a long time, and often prevented the patients from doing their usual work. In none of the cases was oedema a marked feature, and in only a very few was albumen noted as present in the urine. In a few of the cases palpitation was given as the essential symptom which caused the patient to seek for advice.

Etiology.—In 23 cases no definite cause could be assigned for the condition of the heart. In 10 the confession was made of excess in alcohol, and it is probable that a good many more had used alcohol in large quantities, as patients are not inclined to make this admission to a house-officer. Seven patients had acute or chronic rheumatism. An examination of the age of the patients shows that all of them were in middle life, or past that period.

Physical Examination of the Heart.—In all the heart was enlarged, and the apex seen or heard, or both, outside of the line of the nipple. In one case the area of cardiac dullness extended two inches to the left of the line of the nipple. Irregularity of the action of the heart was noted in 13 cases, and irregularity with intermittency in 8 cases. In 7 cases rapidity alone was noted, while in 14 cases the only abnormal auscultatory sign was a marked feebleness of the pulsations, with a short valvular sound at the apex instead of the booming sound usually heard with the first sound at this place. I give a few typical cases:

CASE I. Man, fifty-three years of age. Complained of pain in the right chest. Dyspnoea for three or four years. Had been addicted to the abuse of alcohol. The heart was enlarged, irregular in force and rate, and the sounds were weak.

CASE II. Man, forty years of age. Complained of vertigo, slight dyspnoea on exertion, general malaise; was unable to work. Symptoms have existed for about a year. No cause could be assigned for his trouble. Heart was enlarged one-half inch to the left of the nipple line; the apex was seen and felt just beneath the nipple. Action of the heart occasionally irregular; first sound short, faint and valvular.

CASE III. Woman, forty years of age, a seamstress. She had noticed shortness of breath and palpitation for two years, which had interfered with work. No cause could be assigned for the trouble. There was slight enlargement of the heart; its action was very irregular in rate and rhythm. There was slight oedema of the legs; no albumen was found in the urine. It is possible that in this case there may have been a stenosis of the mitral valve, but the absence of any history of rheumatism or any abnormal sounds at the mitral valve renders the diagnosis at least doubtful.

THIRTY-NINE CASES OF VALVULAR LESIONS OF THE HEART.

Men, 26 cases; women, 10 cases; children, seven to ten years of age, 3 cases. The duration of the symptoms, when noted, was as follows:

- 5 cases, several weeks.
- 10 cases, several months.
- 4 cases, a year or more.
- 6 cases, 2 to 3 years.
- 5 cases, several years.
- 2 cases, 8 and 15 years respectively.

In 7 cases no symptoms were presented suggestive of any cardiac trouble. One case came in on account of gonorrhoea; another, who complained only of pain in the lumbar region, had a mitral regurgitation, with an enlarged heart in which hypertrophy was the essen-

tial factor in forming the increase of size. Fifteen years ago, when a boy, he had acute articular rheumatism.

In some of the cases the symptoms which brought the patients to the clinic had been noticed only for a few weeks; others who engaged in hard labor had suffered more or less for many years.

The symptoms complained of were these:

- 7 cases, a sense of pain or distress in the cardiac region.
- 15 cases, dyspnoea.
- 7 cases, cough.
- 4 cases, dizziness.
- 2 cases, oedema.

It is extremely interesting to note the ability to work as an index of the effect of the cardiac lesion on the individual. Only seven had given up their work on account of dyspnoea or shortness of breath; while, as stated, seven made no mention of symptoms suggestive of any cardiac disease. Only two of the men were engaged in light work, the others being day-laborers, or otherwise employed at hard, manual labor. Several of the patients who had marked valvular defects with great increase in the size of the heart were actively employed in hard labor. One case is especially noteworthy, that of a blacksmith, twenty-five years of age. He complained of dyspnoea on exertion, and a considerable swelling of the body and extremities which had existed for several months. He had acute articular rheumatism two years before he was seen at the out-patient department. Physical examination showed pallor and cyanosis; the heart was enlarged two inches to the left of the nipple; there was a loud double murmur at the base, a systolic murmur at the apex and in the tricuspid area. He came to the out-patient department for several months; and during all this time continued to support his family as a blacksmith.

Such an analysis of cases shows us very vividly that because a man has valvular heart-disease he is by no means to be considered incapable of working, and may live in comfort for many years, as in several instances the rheumatism which appeared to be the etiological factor of the disease had occurred many years before the patients were seen at the clinic.

Etiology.—In 14 cases no cause assigned; in 16 cases, acute articular rheumatism; in 7 cases, chronic rheumatism.

A boy of ten years was seen who had never had rheumatism or any acute infectious disease. He came in on account of epistaxis, but the mother said that he had never been "ragged." There was great enlargement of the heart, with violent action and a pre-systolic and systolic murmur.

The following forms of valvular lesion were seen:

- 16 cases, mitral regurgitation.
- 9 cases, mitral obstruction and regurgitation.
- 1 case, mitral obstruction.
- 5 cases, aortic obstruction and regurgitation.
- 4 cases, aortic and mitral regurgitation.
- 1 case, aortic and tricuspid regurgitation.
- 1 case, aortic regurgitation.
- 1 case, aortic stenosis and mitral regurgitation.
- 1 case, aortic stenosis.

THE Faculty of the Medico-Chirurgical College of Philadelphia has created three new clinical chairs, namely, genito-urinary surgery, orthopedic surgery and otology. These, together with the vacancy in the chair of clinical medicine, will be filled permanently at the end of the present session.

A BLOODLESS OPERATION FOR HÆMORRHOIDS.

BY THOMAS H. MAWLEY, M.D.,
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As hæmorrhoidal diseases of the rectum and anus are very common, and very often lead to very grave disturbances of the whole system, any line of treatment which will relieve or wholly subdue them, without any serious inconvenience or involving danger to life, will be welcomed by the profession.

At the beginning, it may be well to consider for a moment what we understand by the term "hæmorrhoids." From the etymology of the word we expect to find blood-tumors; but, in strict truth, in very many cases of so-called hæmorrhoids or piles the vascular system is totally devoid of any implication whatever; the small neoplastic formations which present themselves along the base, annular rim or roof of the anus and rectum, being histologically purely adenoid, papillomatous or vegetative. It is important that the anatomical distinction be made clear in this instance; for the treatment about to be commended applies especially, and almost solely, to those anal tumors which are, or were, entirely dependent on a diseased condition of the hæmorrhoidal veins, in other words, those which are of a venous origin only.

Another important question arises with respect to the relative frequency of these anal varices, designated piles. Are anal varices, dilatation of the veins or those tumor-like formations, either internal or external to the external sphincter, essentially a pathological condition? and, as such, in all cases, does it require active, radical measures for its abolition?

Very naturally, our course will be determined largely, in those cases, by a definite answer to this question.

If piles are all superfluous, neoplastic excrescences, then there can be no question as to our course in all cases.

During the past five years, I have made an examination of a very considerable number of supposed healthy recta on the living; and, in the dead-house, have carefully inspected under good light a large number on the cadaver. It was found that in both more than fifty per cent. had venous varices of the rectum. In many of the living, in whom varices of large calibre were numerous and extremely turgid, they never in their lives suffered from piles in any form, that they were aware of. Therefore, it seems to me that the hæmorrhoidal dilatation in man is rather a physiologically degenerative condition, which, in late life, is a source of no inconvenience, but which, at middle age, is often attended by or associated with such complications as to render it a distinct pathological lesion.

This view is further supported by the fact that cutting out, injecting or ligating off sundry hæmorrhoidal masses will not in all cases cure the disease. The varicose state of the upper rectal vessels remains, and nothing is wanted to promote their return but the exciting circumstances which caused their irritation in the beginning.

COMPLICATED HÆMORRHOIDS.

Diseased hæmorrhoids may be divided into three principal classes: (1) inflamed hæmorrhoids, (2) ulcerating hæmorrhoids, (3) bleeding hæmorrhoids.

Besides, we say internal or external, according as

they are without, or outside the external sphincter, or internal to it.

When internal medication has not succeeded, and, when palliative, topical applications have failed to afford permanent relief in chronic hæmorrhoids, in their radical treatment by the *bloodless* operation the majority may be cured, or at any rate greatly relieved.

THE ADVANTAGES OF THE BLOODLESS OVER OTHER SURGICAL MEASURES IN TREATMENT.

(1) The operation may be performed with a less number of assistants, and is very simple in its technique.

(2) As there is no division of the tissues, the dangers of infection, of abscess, ulceration and fistula are eliminated.

(3) There is no danger from the immediate loss of blood during operation or of serious secondary hæmorrhage.

In all cases, the evening before operation the patient should have the colon well cleared of all fecal matter by a brisk purgative.

In the morning, when everything is in readiness, the patient should be given from two to four ounces of whiskey, the quantity to be gauged according to previous habits, its effects, etc. After having cleansed, shaved and scrubbed the integuments over the ischio-rectal fossa, we are prepared for the first step in the operation, which is, effective *cocainization*, hypodermically applied. Local analgesia, when practicable, is much more preferable to pulmonary anesthetics. Our patient is more manageable, and there is no spurning of the feces over the operative field during manipulation.

Cocainization complete, the next and most vital step is complete and thorough *anal dilatation*. Without this being efficiently carried out, all else is a failure; but, to be painless and safe, it must be gradual and steady, or we shall rupture the muscle and leave our patient incontinent. In chronic, old cases, wherein, owing to malnutrition and interstitial changes in the sphincter, it has parted with its elasticity, laceration is very easy if we do not exercise caution.

Thorough anal dilatation accomplishes two purposes of great importance: First, it opens widely the anal portal, and so paralyzes the levator-ani that the lower fourth of the rectum—that part always implicated in hæmorrhoids—prolapses through the open vent, when it can be most minutely inspected and radically treated. This, however, is of minor importance compared with the profound effects which dilatation produces on the rectal disease. It is not material whether the hæmorrhoids belong to the inflamed, intensely itchy or irritable type; this stretching exercises a most salutary influence on them.

The third step, in simple hæmorrhoids, will be the separate treatment of each tumor by forcible pressure-massage. Before this is commenced, the entire cluster should be wiped clean and dry, and be then freely mopped with the cocaine solution. Now each hæmorrhoid is separately seized, close to its base, firmly between the tip of the thumb, index and middle fingers; first, put on a moderate but full stretch; then twisted; and finally so completely crushed that it is reduced to a pulp, and none of the investing tunics remain except the mucous membrane and its under stratum of fibrous tissue. When this has been completed the entire

mass is again pressed up inside the sphincter, a suppository of opium introduced, a pad and bandage applied, when the patient is returned to bed. An active but painless inflammation follows, and, as a rule, within two or three weeks absorption and atrophy have so reduced the vascular masses that nothing now remains but their shrunken, diminutive stems.

The ulcerative and hæmorrhagic varieties, along with cocainization and dilatation, must have superadded a special therapy appropriate to each.

Since January of this year, 1893, 32 cases of hæmorrhoidal disease have come under my care, in the hospital and outside. Many have come to me who feared anæsthetics, and others who were averse to having any cutting operation performed. In all, the permanent results have been eminently satisfactory; and from what previous experience I have had with this procedure, there is no reason to believe that the cures will not be as durable as those effected by other more sanguinary measures, which are not without danger in themselves, and are sometimes followed by the most lamentable consequences.

Of my latest series of cases, 17 were men and but 15 women. Fourteen were cases of simple, chronically inflamed hæmorrhoids, nine ulcerating and itchy, and nine bleeding. Four of the female cases were of the bleeding variety. Of the ulcerating type, in six of them there was a well-marked tubercular cachexia.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, November 6, 1893,
DR. CHARLES P. PUTNAM in the chair.

DR. J. B. MCCOLLOM read a paper entitled,

SOME REMARKS ON DIPHTHERIA.¹

DR. MASON: The interesting paper of Dr. McCollom deals with a subject which is practical and important to every one who is practising medicine. The bacteriological investigations seem to have left the matter in such a position that to-day no one is justified in making a diagnosis in a doubtful case of sore throat without cultures. The difficulty of an off-hand clinical diagnosis by inspection is obvious. In former years mistakes were very often made, and they are still made, as is evident from the number of cases that come to diphtheria wards, which, after a day or two, by the application of this method, are shown not to be diphtheria. In October, perhaps a dozen cases entered our ward at the City Hospital which turned out to be pharyngitis, tonsillitis or stomatitis, all sent to the hospital as diphtheria. The inspection of such cases always raises a doubt with regard to the diagnosis, which may not be determined for a day or two, and the question of isolation becomes important. In the hospital now building there will be facilities for isolating considerable numbers of doubtful cases, so that they will run no risk of contracting further disease. But fortunately, as Dr. McCollom remarked, these milder sore throats seldom become diphtheria. It is a rare thing for such a case to contract diphtheria, even

when in the presence of a considerable number of malignant cases. Such patients are sent away as soon as possible, either into another ward or away from the hospital. That, however, cannot be done until suitable cultures are made, a matter of a day or two. Occasionally, from some fault of the technique or some mistake or other, the bacilli of diphtheria are not found at the first examination, but are found subsequently. Therefore, it is best to have more than one culture made in cases in which the result is negative before sending such patients away from the hospital. This involves the stay of a few days, and by that time the patients are probably well enough to go out. From the clinical standpoint, the experiments at the City Hospital have been of great value, not only in separating these classes of non-diphtheritic sore throats from true diphtheria, but also in differentiating the mixed throats, the cases of scarlatina in which diphtheria exists from those in which no diphtheria exists.

With the disappearance of the visible membrane in the throat diphtheria does not end; that is, the bacilli may be found for a considerable length of time, and it is a question whether patients whose throats have cleared up and who present no discharge from the nose — nothing to indicate continuance of the disease — are to be regarded as well and sent home, or whether they should be retained for a longer time. The Klebs-Löffler bacillus may be found for an indefinite time in the secretions of the nose and pharynx. The longest period that I have observed is three weeks after the membrane had disappeared. The child was apparently well, the symptoms had gone, the appetite was good, the patient was becoming ruddy, and yet the specific bacillus persisted for three weeks. With our present knowledge, it does not seem proper to send patients in that condition away from the hospital or into another ward; therefore they are retained until the Klebs-Löffler bacillus is absent from the secretions of the nose and of the pharynx. I believe that this organism may persist for a much longer time than three weeks. Perhaps Dr. Williams has more knowledge on that subject than I have, but I think I have read of a case in which some fifty days elapsed before these organisms entirely disappeared. Fortunately, these cases are few, and we do not have to crowd our wards with patients requiring such a length of time for convalescence. It may be doubted whether these late bacilli are not of the modified form, to which Dr. McCollom referred, which are not active conveyers of the poison. Although every one is now upon the alert in the examination of throats, it does not seem probable that in the near future differentiation with this great degree of care will be the general practice. In the lower parts of the city I suppose that bacteriological cultures are not practicable, unless, indeed, this very excellent scheme which Dr. Ernst wishes to inaugurate can be carried out by the majority of physicians practising all over the city.

DR. WILLIAMS: I am sure we have all been very much interested in Dr. McCollom's paper, and it is certainly very important that this question should be spoken of repeatedly. Very much has been said and done about cholera, and comparatively little said about diphtheria, a disease which is always with us and very fatal in its character. A good deal is now being done but there is more still to do. It seems as if the disease were transmitted from patient to patient directly in the majority of cases. Many of the cases which come to

¹ See page 107 of the Journal.

the City Hospital give a history of having been in the same house with diphtheria or having had a brother or a sister ill with the disease recently. Sometimes, of course, we do not get a history of exposure; but it is rather significant that we do in so many cases get a history of direct exposure. The question of bacteriological examinations interests me very much. I believe I was the first to use that method of diagnosis in this community, and its importance will soon be generally recognized. As regards the mild cases of which Dr. McCollom speaks, they are especially dangerous to their neighbors, because their true character is often not realized and therefore proper precautions are not taken. It is not unusual to find mild cases that to the unaided eye do not present the ordinary symptoms or appearances of diphtheria (in fact the throat may look normal), but that are shown by bacteriological examination to be diphtheria.

I recall one case which two physicians saw, and said there was nothing in the throat. It seemed to me there was a slightly suspicious spot; I did not call it membrane. There was not much redness; it was nothing like as angry a throat as you get in mild tonsillitis, but cultures showed the presence of the bacilli, and the case proved to be one of diphtheria. I think it is very important that examinations should be made where there is the slightest symptom connected with the throat among those who have been about a patient with diphtheria. It is not necessary to wait until you get symptoms of severe tonsillitis, or follicular tonsillitis, or something very distressing; but it is well to be on one's guard, for sometimes you find bacilli when you least expect to—at least, that has been my experience several times.

As regards the detection of these bacilli, I think in some cases, especially early in the disease, when you have chiefly the bacilli of diphtheria, and these are not obscured by other organisms which develop later, they may frequently be detected without cultures. In such cases it is very easy to take a cotton swab, and, after brushing it over the throat, rub it on a cover-glass, dry, and stain with Löffler's blue solution and examine under the microscope. In many cases one can find the bacilli in a few minutes. When you find them, this method of examination is of importance; when you do not, it has comparatively little weight; that is, you cannot exclude diphtheria by means of this preliminary examination. Of course, one should not rely upon this alone; cultures should be made as well.

As regards the method of carrying the bacilli. This contrivance which I have in my hand is very simple. Here is a small stick with a bit of cotton around the end. The cotton end is brushed over the suspicious places in the throat, and the stick is then placed in a strong test-tube, which is stopped with sterilized cotton. To prevent the specimen from drying, a small piece of cotton moistened with water may be placed above the stopper, and the tube may then be closed with a cork to prevent evaporation. This contrivance, which has, of course, been previously sterilized, answers very well to carry the swab to the laboratory where cultures can be made.

As regards the length of time during which the bacilli may persist in the throat, I have in mind several cases, some of which I have already reported. In one case they persisted about six weeks, in another about two months, and in another nearly three months. The last case is interesting because the patient left the

hospital and some weeks later had hoarseness; and on examining the throat a membrane was seen in the larynx, and the bacilli were readily found, so that in some cases the bacilli may exist in the throat a long time. Isolation should not be terminated, although the throat may look perfectly normal, until the bacteriological examination fails to show the dangerous bacilli. This may sometimes be weeks after the throat has been clear of membrane.

Not infrequently you find diphtheria coincident with other diseases. This is especially the case with scarlet fever. In measles you sometimes find diphtheritic membrane, and it is well to remember that in typhoid fever you may in some cases also find membrane in the throat in which the diphtheria bacilli are present. Patients, of course, may get diphtheria or scarlet fever if placed near those ill with either of these diseases. Diphtheria does sometimes occur in patients who have had tonsillitis or some membranous affection of the throat, and who have been exposed to diphtheria. I have seen some cases of this kind. I think the tradition that cases of tonsillitis do not acquire diphtheria has exceptions; it simply means that that has not been observed; and I think, with the more modern means at command, we shall be enabled to detect more cases of this sort.

DR. SPRAGUE, of Providence: I have been very much interested in the paper of this evening, and certainly the subject is one in which we are all interested. My studies at the present time are more in the line of diseases of the ear and throat, and I do not see many cases of diphtheria; but I meet cases in which at the time it is impossible to make the diagnosis. In Providence our board of health has been in the habit of making the diagnosis of diphtheria by the death-certificate and of scarlet fever by desquamation; but within a few months or a year, they have been going into the bacteriological examination, systematizing things, making the work more thorough. I think that the ground has been very ably covered by the reader and by the discussion, and that little remains to be said.

DR. F. C. SHATTUCK: Like everybody else, I suppose, I hailed with great joy the announcement of a method which would enable us to distinguish diphtheria from other throat affections, because I have always felt it to be one of the most difficult diagnoses in medicine, to determine in certain cases whether diphtheria existed or not. Of late years I have not seen many cases of diphtheria. When I had a dispensary district I saw an immense deal of it. Last winter I saw a child with a suspicious throat. I had Dr. Stone make cultures; the Klebs-Löffler bacillus was found and the case was treated accordingly. A few weeks later another child in the same family came down with a throat which clinically, macroscopically, was certainly diphtheria. There was false membrane on the tonsils and spreading up on the soft palate. At my request Dr. Stone made cultures of this case. His first result was negative. He made a second examination which was also negative. I treated the case, however, exactly as if it were one of diphtheria, and I must say that I should not feel safe in following any other course at present. I do not feel sure that this method has been practised long enough, or that we know enough about it to warrant us in treating throats which look like diphtheria to the naked eye in any other way than as if they were diphtheria. When a new method of

diagnosis is announced, just as when a new drug is brought forward, I think the tendency of the profession is to be too enthusiastic at first. Perhaps I show my ignorance in speaking as I do; but I should not feel satisfied in my own family or in any family to remove restrictions and to allow a patient to go about who had a throat which clinically was diphtheria, although the bacteriological examination was negative. I shall be very much interested to see what ultimately comes out of this. If we have a sure means of differentiation it will be an immense boon. But a new terror is added to life in the fact that patients sometimes for fifty days after naked-eye manifestations have vanished, have the bacilli in their mouths and noses or throats, and consequently may transmit the disease to others. In the nose there are so many hiding places for bacilli that I cannot see how a simple little swabbing, with negative culture results, can make us sure of their absence.

DR. MASON: With regard to Dr. Shattuck's remarks it has struck me too that some cases do not present the Klebe-Löffler bacillus when they should do so according to the appearances, and that has seemed to me to be due rather to faulty technique or to some mistake than to the fact that these bacilli might not be found perhaps by more prolonged search. Such a case came under my observation not long ago in which a patient had membrane in the throat — not very much, but there was laryngeal stenosis and tracheotomy was required. It was evidently a case of tracheal diphtheria, but the bacilli were not found at the first examination. So I think that such negative results are only of value from that point of view; they are negative, but they do not prove that the subjects do not have diphtheria.

DR. SHATTUCK: I do not see how greater care could have been taken in this case. A thoroughly competent man was selected who was perfectly familiar with the appearances of the bacilli and their manner of growth, and at my solicitation he made two examinations with the greatest care, the results of both of which were negative.

DR. WILLIAMS: I think what Dr. Shattuck said is very suggestive. It is a point which has been in my mind, and in fact in a paper which I read last June before the Massachusetts Medical Society, I said that the cultures were not infallible. I do not think they are to be absolutely and entirely relied upon. I think it is possible to have some slip so that you do not get a growth of the bacilli, but our ability now to detect diphtheria early is very much greater than it used to be, and this method is certainly a great step in advance, and will render much service. I had a case within a few days where examinations were made with great care with negative results. The patient died, and no bacilli were found in any of the parts about the throat, tonsils or anywhere, except in the little chink between the vocal cords. The trachea was taken out and cut open with carefully sterilized scissors, and a small drop of purulent matter about the size of a pin's head was found; cultures were made, and the bacilli developed. I recall a case in which a child had measles, and coughed up large pieces of membrane. It seemed to me to be a case of diphtheria; and I held to that diagnosis, which was based on a preliminary examination, in which the bacilli were found, although I was told that the bacilli were not found in the cultures. Another specimen was obtained and another culture made, and no bacilli found: then an-

other specimen was taken from the throat and examined directly in the way I have referred to for making the preliminary examination, and the bacilli were perfectly evident. The cases that Dr. Councilman and I studied together last year included some which came from two institutions of the city where there are a considerable number of children; and in these institutions there happened to be during a period of about six weeks cases of diphtheria alone, cases of membranous throats without the bacilli, cases of scarlet fever alone, and cases of scarlet fever with diphtheria. Similar conditions must, I think, favor the development of these two diseases. Let me repeat: it is well to bear in mind the possibility of failure to find the bacilli by the method of culture. Corrosive sublimate which is often used as a local application inhibits the growth of the bacilli; one part in thousands will inhibit the growth of the bacilli, prevent their growing at all on the culture media; but a pretty large proportion of the corrosive sublimate is not sufficient to kill the bacilli. While speaking of corrosive sublimate I should like to say that it does not seem to me a very serviceable agent as a local application; it is very irritating even in a dilute solution if used persistently. When applied in the strength of 1 to 2,000 or even 1 to 500 it does not seem to have much effect in stopping the growth of the bacilli and the spread of the membrane. I have tried treating one part of the throat with corrosive sublimate in pretty strong solution, and not treating other portions; and the parts treated with corrosive sublimate did not do as well as the parts not treated. I am very sure that corrosive sublimate as a local application may do harm locally as well as cause poisoning; but I understand from the Secretary of the Society that the question of treatment is not so much before the meeting as that of diagnosis, so I will not enlarge upon the treatment of diphtheria.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED Meetings, held at the New York Academy of Medicine, Tuesday evenings, December 5, 1893, and January 2, 1894, DR. M. ALLEN STARR, President, in the chair.

GLIO-SARCOMA OF THE BASAL GANGLIA.

DR. FREDERICK PETERSON presented a specimen of gliosarcoma of the basal ganglion. The case was that of a man aged fifty years, who had been in excellent health, with the exception of occasional attacks of vertigo and slight headache, until June 8, 1893, when he fell to the floor in his office. He had a general convulsion, and was unconscious ten hours. In two weeks he was well enough to return to his office from his home in New Jersey, and to continue at work for five days, when headache and malaise kept him at home. Four weeks after his first convulsion he had five or six more of short duration, and rather left-sided in character. At this time he presented the following symptoms: left hemiparesis and hemianesthesia, left hemianopsia, tendency to somnolence, pupils equal and small, sometimes delirious, great frontal headache, pulse 52 to 60 per minute, respirations slow, slight optic neuritis. The diagnosis of sarcoma or glioma situated deep in the brain, so as to affect the posterior limb of the right internal capsule, was made. An operation was out of the question. The man was un-

conscious during the last three days of life. At the autopsy, made just five months after the first apparent onset of symptoms, a glio-sarcoma was found, about two inches in diameter, occupying the region of the basal ganglion, especially posteriorly, and projecting upwards into the right lateral ventricle and downwards somewhat into the right crus. It was not strictly demarcated, and there was some infiltration into the white matter of the brain, with here and there some areas of softened brain tissue. A secondary tumor, the size of an almond, was found attached to the dura mater on the right side, compressing the cortex in the region of the angular gyrus.

DR. ALFRED WIENER described a case of

SUBACUTE UNILATERAL BULBAR PALSY, WITH AUTOPSY.

The patient was a young man aged seventeen years. Family history negative with respect to any hereditary nervous trouble. Patient had always been in good health up to two years ago, when he was taken down with an attack of perityphlitis, from which he recovered after five weeks of illness. About two years ago last spring the glands on both sides of his neck in the region of the sterno-cleido-mastoid muscles began to enlarge. In the summer of the following year, 1892, an abscess formed in one of these glands and had to be opened. In August, 1892, the glands on the right side, together with a large portion of the sterno-cleido-mastoid muscle, were excised. Those on the left side were removed the following month, and were found to be of tubercular nature. The patient rapidly recovered, and nothing was noticed in the way of any disturbance of the parts which might have been involved in the operation. In November, 1891, it was discovered that the patient's tongue deviated to the right side, and shortly after this he experienced some difficulty in swallowing. He soon became hoarse, and coughed with difficulty, and within a space of ten days the patient developed a complete unilateral palsy of the right side of his tongue, soft palate, pharynx and right recurrent laryngeal nerve. There was no disturbance of his respiratory or cardiac organs, or other condition present which should have called attention to an affection of any other cranial or spinal nerves excepting the ninth, tenth, eleventh and twelfth. The symptoms remained stationary for a time; then the patient began to grow very much weaker; and suddenly, on March 26, 1893, he had an attack of respiratory failure. From this he partially recovered, and then continued in a condition of slight respiratory difficulty. He could hardly speak above a whisper. He had excessive salivation. On April 11th he could barely protrude his tongue beyond the edge of his teeth. His lips remained normal, and could be brought into perfect apposition. The palate and pharynx on the left side remained normal. On April 20th he had another attack of respiratory failure, which proved fatal.

The autopsy, made six hours after death, revealed that the motor cortex, internal capsule, crura cerebri and pons were normal. The nucleus of the twelfth nerve on the right side was much diseased, while on the left side it was diseased to a slight degree. The nuclei of the ninth, tenth and eleventh nerves were slightly affected, a little more on the right side than on the left. The respiratory bundle appeared to be completely degenerated on the right side, while on the left, in the region of the hypoglossal nucleus, its lower

and anterior portions were diseased. In the region of the ninth nerve a few fibres were affected. The intramedullary roots of the ninth vagus, vago-accessorium and hypoglossal nerves were less prominent on the right side than on the left. Otherwise, everything appeared to be perfectly normal up to the exit of the first cervical nerve in the spinal cord. As regards the nature of the lesion, no tubercle were found, as had been expected, nor were tubercle bacilli found on microscopical examination. There was simply an atrophy of the ganglion cells and fibres motor in function.

From a careful consideration of the preceding case and autopsy, Dr. Wiener drew the following conclusions:

(1) That the region of the hypoglossal nucleus gives origin to nerve-fibres which supply the tongue, palate, pharynx and larynx on one side of the body.

(2) The column of nerve-fibres known as the respiratory bundle consists of fibres from the glossopharyngeal, vagus and vago-accessorium nerves; and the lower and anterior portion of this column probably serves as the locality for the vagus and vago-accessorium fibres.

(3) That the glossopharyngeal nerve seems to control the reflexes of nausea and gagging in the soft palate and pharynx, and also to send some of the motor filaments to the pharyngeal muscles. These latter filaments take their origin in the hypoglossal nucleus, and ascend in the respiratory column to the nucleus proper, and then make their exit with the glossopharyngeal nerve.

(4) That the soft palate muscles are not innervated by fibres from the seventh nerve.

THE PONS-MEDULLA FLOCCULUS TRIANGLE AS A TUMOR SITE, WITH PATHOLOGICAL FINDINGS.

DR. ROBERT SAFFORD NEWTON read a paper on this subject, which he illustrated by the following case:

Female, aged twenty-eight years. She entered St. Mary's Hospital July 10, 1893, complaining of a constant headache for a fortnight, with morning vomiting and sickness for seven days. No history of any trauma; no specific history; family history negative. Two days after admission she was examined, and apart from a silly manner and a slight drawing in her speech, she presented no symptoms. On July 20th the patient became weak and fell to the floor. She muttered to herself during the night, and moaned about her head. The pain appeared to be diffuse. She was dull and stupid. Her speech was prolonged and tedious. At this time there was no defect of the cranial nerves. Pulse 45 per minute. She had a shuffling walk, with some tendency to go to the right. The superficial reflexes were present; the knee-jerk was increased on the right side. On July 22d the patient became quite deaf. The headache was very violent, keeping her awake. July 24th, patient very feeble; deafness marked, especially in the left ear; no tenderness nor discharge. The patient stated that she could not see well, but the ophthalmoscope showed no marked lesions. Upon standing up, she was projected to the right very forcibly. The movement at each trial was accompanied by a look of fear, paling of the face, dilatation of the pupils and bathing of the surface in cold perspiration.

From this time on the patient failed rapidly. The

sight became worse; the patient grew petulant and childish; her appetite remained fairly good. Nystagmus was present for one day only. The external rectus was also temporarily affected. She had a transient facial tic. The sense of smell was present to the last. Optic neuritis first appeared in the right eye, then in the left, and rapidly went on into total blindness. She also became totally deaf. Her taste sense was not appreciably affected, although she occasionally complained of a hot, scalding feeling in the back of the tongue and palate. Her pulse was slow from the beginning; towards the last it dropped as low as 10, 12 and 14 beats per minute, and three days before her death it dropped to 6 beats per minute. There was no anæsthesia nor implication of the pain, temperature, tactile or muscular senses. She never had any convulsive seizures or paralytic attacks. The weakness steadily progressed; there was loss of control of the sphincters; the respirations became slow, and gradually ceased. Just before her death she was still able to distinguish between whiskey and milk.

The autopsy was made ten hours after death. Upon removing the brain, an enormous tumor with a central projection was found on the left side. The swelling was somewhat triangular; its apex was under the thalamus and geniculate body, its base crowding the cerebellum off from the medulla, and its side line not quite reaching the middle of the pons. In the central pons region was a projecting mass, shaped like a thumb. The bulk of the growth was a cyst. The left half of the pons was much softened, and the medulla and cerebellum were flattened. The olfactory nerve was intact. The optic nerve was swollen on the left side. The third and fourth nerves were intact. The fifth and sixth also seemed to have remained unchanged. The seventh nerve was on one side of the growth, the eighth on the other. The nuclei of the ninth, tenth and eleventh nerves were pushed aside by the change in position of the floor of the medulla. The nucleus of the twelfth nerve was entangled in the growth. The cyst began at the margin of the fourth ventricle by a blocking of the channel of communication between the lateral cisternæ of the ventricle and the cavity of the arachnoid.

SYRINGO-MYELIA: CENTRAL GLIOMA OF THE SPINAL CORD, WITH SPONTANEOUS CENTRAL HÆMORRHAGE.

DR. CHARLES L. DANA read a paper on this subject, and narrated the history of the following case:

The patient was a man who had a central gliomatous tumor in the lower part of the dorsal region of the spinal cord. This tumor progressed slowly for two or three years, causing, during that time, the symptoms of a transverse myelitis chiefly, although the presence of a spinal tumor was suspected. Among other symptoms there was anæsthesia of the right leg extending up to the twelfth dorsal spine, and involving touch, temperature and pain sensations. Anæsthesia involved to a lesser extent the left leg. Just before the man's death a large hæmorrhage occurred, which was confined to the centre of the spinal cord and which caused exquisite pain; the man, in fact, dying from exhaustion. Upon post-mortem examination a large central hæmorrhage, destroying nearly every particle of the spinal cord at the level of the seventh dorsal segment was found. This hæmorrhage extended up and down for a distance of about three inches. Around the hæmor-

rhage and above it were evidences of a gliomatous infiltration involving nearly the whole of the transverse area of the cord at that level. Very striking secondary degenerations, ascending and descending, were found. The case was one of glioma of the spinal cord, without there being any cavity formed. Although clinically, and in one sense, pathologically, it would be a case of syringo-myelia, yet that name cannot strictly be applied to it.

In commenting on this case, Dr. Dana referred to the question of the existence or the non-existence of a pain tract, and the advisability of our searching for it. The psychologists seem to have come to the conclusion that pain is not a sensation, but a form of feeling; that it is not to be classed with the sensations of touch or temperature or heat; that it does not have peripheral end organs and that there are no nerves in existence which on irritation alone produce pain; that there is no such thing as a pain tract; that in attempting to locate such a tract we are pursuing a will-o'-wisp. Dr. Dana said that after a very careful study of this question he has been converted to the psychologist's view. If we claim that there is a special tract for pain, we can just as well claim that there is one for hunger and various other sensations. If there is a special tract for any of the common subjective sensations, there must be a special tract for all.

DR. B. SACHS said that in former days he held to the view that pain was nothing more than an intensification of the ordinary tactile sense; and in the majority of cases we meet with such an explanation would hold good, and under such conditions we would not look for any special pain tracts. The clinical facts that have been brought out with regard to syringo-myelia, however, do not bear out that theory. Touch and temperature sense may remain normal, whereas the pain sense is entirely lost. The psychologists' view of this question is one that is rather difficult to reconcile with the clinical facts we have obtained from syringo-myelia. On the other hand, this disease is very destructive and irregular in its course, and for this reason is rather an unsafe guide for us to go by in trying to determine physiological functions.

DR. C. A. HERTER said that several years ago he hemisected the spinal cord of a monkey in the mid-dorsal region; he was unable to find in that case any evidence of a loss of sensibility to pain either on the same side as the lesion or on the opposite side. He also performed this experiment on an opossum, with a like result. Mott, in his experiments, cut the antero-lateral ascending tract and was unable to find any evidence of loss of sensibility to pain. The results of experiments on animals, of course, cannot be applied directly to man. The subject brought up by Dr. Dana is an interesting one, and up to the present time we have not enough cases on hand to base any definite conclusions upon.

DR. LANDON CARTER GRAY said that in our present state of knowledge as regards the exact functions of the various columns of the cord—the columns of Burdach and Goll and the so-called column of Gowers—and the uncertainty that exists as to the exact demarcation of the latter, we can arrive at no definite conclusions as to the location of the pain tracts. So far as clinical evidence goes, there certainly is such a thing as a pain sense. In hysteria the tactile sense may be preserved, while the pain sense is entirely lost.

DR. STARR said we must admit the existence of pain sensations and of a centripetal pain tract. That tract must necessarily go in through the posterior nerve roots, because we have painful sensations of a hallucinatory character in locomotor ataxia. It must extend for a distance in the central gray matter of the cord. We have now on record over seventy cases of syringo-myelia, with autopsies. In these cases there is a decided loss of pain in a certain limb. If the affected limb is an arm, then the cavity in the cord is in the cervical region, and the pain sense is preserved in the body and legs. Therefore these sensations, though they may pass for a little distance in the central gray matter of the cord, afterward pass into the white columns. The central gray matter contains numerous cells, each of which sends its fibres into the antero-lateral columns and these pass upwards. While it is by no means positive that the antero-lateral columns transmit sensations of pain, all the facts seem to point to the correctness of that theory. The column of Lissauer, to which one of the speakers referred, can have nothing to do with the transmission of pain sensations. It consists only of short fibres, does not increase in size from below upward and cannot transmit impulses upwards for any great distance. The sense of hunger is by no means analogous to the sense of pain, as Dr. Dana intimated. We must distinguish between a common sensation and a special sensation.

In conclusion, Dr. Starr referred to a case reported by Edinger, with autopsy, in which the lesion was found in the parietal region on one side, and in which the symptoms were chiefly those of intense pain radiating in the opposite side of the body. Edinger described it as a case of central lesion, with sense of pain.

DR. DANA then closed the discussion. He said that his views regarding the non-existence of a pain tract were only arrived at after a long and thorough study of the subject. When we come to mix up pain sense and touch sense and heat sense, etc., we are showing a mental confusion that is unworthy of advanced neurologists. Pain and touch are entirely different. Pain is a subjective or common sensation. Touch is objective. Pain is much more closely allied to hunger than it is to touch. Pain is not a special sensation, but a modification of it. We may have a painful pricked wound, etc., but we do not have a simple sensation of pain. It is always combined with something else. If we can get rid of the idea that we must keep on hunting for a pain tract, it will save much exertion and many futile experiments on monkeys and men.

A CASE OF INFANTILE, CEREBRAL, SPASTIC DIPLEGIA.

DR. F. PETERSON presented the fresh brain in this case. The patient was a female infant, aged twenty months, with congenital diplegia; that is, spastic paralysis of all four extremities. The child was subject to convulsions, had enormously exaggerated kneejerks and ankle-clonus. Its head was exceedingly small. At the autopsy, the skull-bones were found to be considerably thickened, and all the sutures and fontanelles closed and united. The dura was very thick. There was no increased amount of sub-dural fluid. Over each hemisphere, a large group of convolutions, including especially the motor area, were found wanting. The vacuum caused by this atrophy was filled partly by sub-dural fluid and partly by the bulging of each ventricle. There was no internal hydro-

cephalus. There was no communication between the ventricles and the exterior of the hemispheres. A microscopical examination of the spinal cord showed degeneration and atrophy in the lateral columns.

DEAFNESS DUE TO A FOOT-BALL INJURY.

DR. J. LEONARD CORNING narrated the history of the following case: The patient was a young man aged eighteen years, who received a severe kick directly over the right ear while engaged in a game of football. He was first seen by Dr. David Webster, who, upon careful examination, found that there was total deafness on the right side; aerial and bone conduction were suspended. There was no trouble of the middle ear, and the drum was in perfect condition. There was slight bleeding of the external ear. There was no evidence of fracture. The case was then referred to Dr. Corning, who applied to the ear a rapidly interrupting faradic current, which was allowed to pass through the ear about ten minutes, when the hearing was so far restored that the patient could hear the watch at a distance of six inches. Before making the application, the external meatus was plugged with absorbent cotton moistened in salt solution. A severe tinnitus which existed with the deafness was also relieved. Dr. Corning said he had no idea what the lesion was, or why improvement followed the use of the current; it was employed simply as an empirical measure. The young man's hearing is now entirely restored. There was no suspicion of hysteria. The visual field was not tested.

DR. DAVID WEBSTER said he supposed the deafness was due to concussion either of the auditory nerve or of the labyrinth, of which he has seen cases reported. Temporary blindness has been produced by a sudden blow on the brow, without ophthalmoscopic or other lesion. Most of those cases, however, are due to fracture of the base of the skull, involving the optic foramen and producing nerve atrophy. He has never seen another case similar to the one narrated by Dr. Corning.

DR. STARR suggested that the case might have been one of traumatic hysteria or concussion of the auditory nerve. In consultation with Dr. Jacoby he recently saw a case of total deafness in both ears, of central origin, in which a temporary improvement in the hearing was produced by the use of a strong galvanic current, about six milliamperes, which is a strong current for the acoustic nerve.

DR. RALPH L. PARSONS reported

A CASE OF ACROMEGALY.

The patient was a man aged thirty-six years. Family history negative. Never had venereal disease nor used alcoholic stimulants. He was in good health until eighteen years ago, when he had an attack of malarial fever. From this he recovered, and has had no recurrence since. Ten years ago he was told that he stooped and carried his head to one side. Eight years ago he began to suffer from a pain in the back of his head. This came on mostly at night, and not oftener than once a week. Subsequently the headaches occurred more by day than at night. Latterly they have increased in frequency and duration, and have often been excruciating in character. The pain was usually most severe at the occiput, but would also involve the left parietal and frontal regions; the right side of the head was unaffected. About six years ago his attention

was first called to the large size of his hands. He then for the first time perceived that they were of extraordinary size. He does not know for how long a time this increase in size has been taking place. He cannot say whether they have increased in size during the past six years.

A careful examination of the patient was made in October last, with the following result: Weight, 227 pounds. No pronounced symptoms of organic disease. Hair rather coarse, but natural in condition; left ear slightly thickened; forehead retreating; superciliary ridges quite prominent; no exophthalmos; malar bones rather prominent; cheeks appear rather sunken; nose broad and full at the nostrils; lips normal; tongue decidedly enlarged, obstructing free articulation; alveolar processes normal; teeth not separated; chin elongated; head inclined strongly and habitually to the left side and forwards. The hands were large and spade-like, the right hand being decidedly the larger. The soft tissues of the hands and fingers were firm and resilient, as though infiltrated by an elastic substance; they did not pit on pressure. Wrists rather large; arms normal. Thorax and pelvis normal. The feet were large, but perhaps not more so than in the case of many men of his weight. The patient has perspired very freely for the past ten years; of late the perspiration has been decidedly offensive. Besides the headaches already referred to, the patient also complained of pain in the left ear and eye, the latter coming on after reading or using the eye in a strong light. He does not think his eyesight has become impaired. Appetite and thirst excessive. No marked mental symptoms.

On the 21st of October last, by advice of Dr. Starr, the patient began the use of thyroid extract, five drops three times daily. The dose was gradually increased until he received fifteen drops three times daily. With the exception of tonic baths, general hygienic measures and a regulation of the diet, no other treatment was given. At the present time the patient reports that he is feeling decidedly better. He is more cheerful, and his headaches have been relieved to a very great extent. They have not, however, entirely disappeared. There seems to be no change in the dimensions of the hands. His weight has increased rather than diminished. There has been a great improvement in the subjective symptoms, but there is still a reasonable doubt whether this improvement is due to the direct action of the medicine or to the patient's mental status, induced by the fact that something is being done for his relief.

DR. CORNING was inclined to think that the improvement in the condition of the patient was due to the medication employed, rather than to the mere fact that something was being done for him. Such patients, he thought, are usually not of a very imaginative turn of mind.

DR. STARR said he was somewhat responsible for the use of the thyroid extract in the case narrated by Dr. Parsons. There was nothing original in the suggestion, as this method of treatment has been pursued in England in a number of cases of acromegaly. It is purely empirical. The supposed lesion of acromegaly is an increase in the size of the pituitary body. It is questionable whether it is in any way related to the thyroid gland. The eye symptoms in Dr. Parsons's case interested him, because in two other cases of acromegaly coming under his observation there was a

concentric diminution of the visual field, and in one hemianopsia; the latter symptom is quite common, and is probably due to pressure on the chiasm by the enlarged pituitary body. In one case of acromegaly seen at St. Luke's Hospital last spring the patient died of pneumonia, and at the autopsy the pituitary body was found to be normal. There was nothing to account for the peculiar growth of the bones.

DR. PARSONS, in reply to Dr. Webster, said it is generally supposed that there is a sort of relationship between acromegaly and myxedema; whether this belief is well founded, or what that relationship is, he does not know. While his patient was not of an imaginative turn of mind, still he was hopeful; and that element would influence his mental state and perhaps even improve his physical condition.

ERGOT IN THE TREATMENT OF PERIODIC NEURALGIAS.

DR. WILLIAM H. THOMSON read a paper on this subject, in which he gave the histories of a number of cases of severe periodic neuralgias in which the symptoms were promptly relieved by the use of ergot in large doses. In all of these cases the disease was of long standing, and the usual remedies had been employed without avail. Dr. Thomson said his method of administering the ergot in migraine was as follows: The fluid extract of the drug is employed, combined with an equal quantity of elixir of cinchona, to obviate its tendency to cause nausea. Two drachms of this mixture is to be taken in water as soon as the premonitory symptoms of the headache are noticed, and the patient is advised to lie down and keep very quiet. If, after an hour, the headache continues, a second similar dose is taken, and then a third in another hour if necessary. As nausea is such a general accompaniment of this affection, it is provided that if either of the doses be vomited, it should then be taken in an enema of two ounces of water. This medication, the speaker said, rarely fails to arrest the attacks, even in long-standing cases, and with a preventative course of intestinal antiseptics in the intervals, the relief from the malady has often proved permanent.

The following is the history of one of the cases reported by Dr. Thomson. The patient was a young man who suffered from headaches beginning at the occiput and extending to the temples; they generally came on about 11 A. M. daily, and gradually grew worse until they reached their acme about 4 o'clock in the afternoon, after which they subsided, without, however, entirely disappearing. His physician failed to check their increasing severity, although on one occasion he administered thirty-grain doses of chloral with thirty grains of potassium bromide every two hours for two doses, with little more effect than a slight drowsiness being produced. The next day, the patient becoming maniacal from the pain, sixty-five grains of chloral, sixty of bromide and thirty of antipyrin were given within two hours. This caused a profuse sweating and moderate sleep. The third day a consultant was called, who recommended that quinine and Warburg's tincture (which had been tried at the beginning of the treatment) should be resumed in large doses. Accordingly, sixty grains of quinine and two ounces of Warburg's tincture were given in twenty-four hours, with even worse afternoon paroxysms of pain than before. The next day the bromide, antipyrin and chloral were resumed, but no great relief was obtained. At this time he was seen by Dr. Thomson, who recom-

mended drachm doses of fluid extract of ergot every hour for three doses, combining the first two doses with ten grains of quinine, and if his stomach rejected either of the doses, that the medicine be given per rectum. Soon after taking the first dose, the patient experienced a good deal of relief; the second dose was vomited, whereupon it was given per rectum, and this was soon followed by a complete subsidence of the pain, with profuse perspiration. This medication was repeated for three successive days, with final cure of the headaches. The second ten grains of quinine produced decided symptoms of cinchonism.

DR. JOSEPH COLLINS said that he has recently had occasion to try ergot in several cases. In one case the patient had been given huge doses of Warburg's tincture, quinine, bromide, and potassium iodide without any benefit. He was then given drachm doses of ergot, and a marvellous improvement at once followed. This was three months ago, and the man has had no return of the symptoms since. In another case the patient was a lady, aged forty years, who had long been under treatment for migraine, the pain being of a boring character and very difficult to relieve. In this case the value of ergot in the treatment of this affection was discovered accidentally; it was given to check a menorrhagia, and at the same time it relieved the headaches.

DR. THOMSON, in reply to a question, said our present knowledge is not definite enough to form any idea as to how ergot acts in these cases. He simply gave it as an empirical remedy. Furthermore, his paper refers entirely to neuralgias that are definitely periodical. These are usually very severe, and entirely different from the ordinary intermittent headaches. He referred to the fact that quinine, even in small doses, when it is combined with ergot, appears to produce cinchonism much more quickly than when given alone. In only one of the cases reported was there any antecedent history of malarial infection; in that case the patient simply gave the history of having resided in a malarious district. Very likely there was a malarious element in the other cases, of which the nervous symptoms were the only manifestations. Dr. Thomson also referred to the fact that intercostal neuralgia is often accompanied by sciatica; also the occurrence of sciatica after pleurisy. The latter combination he has noticed in about twenty cases.

Recent Literature.

Lectures and Essays on Fevers and Diphtheria, 1849 to 1879. By SIR WILLIAM JENNER, Bart., K.C.B., etc. New York: Macmillan & Co. 1893.

The papers which go to make up this volume were originally published during the thirty years between 1849 and 1879 in various journals and in the transactions of societies, and are now collected together for the first time by the author.

The most interesting and important of these papers are those early ones, published first in 1849-50-51, on the identity or non-identity of typhoid and typhus fever, and on the four febrile processes — typhus, typhoid, relapsing fever and febricula — at that time still commonly confounded in England under the term continued fever. Jenner's name is associated with the solution of this question in England, as were those of

Louis and Valleix in France, and those of Gerhard, Jackson, Stillé and Shattuck in this country. He followed the others at a considerably later period, and was preceded in his own country by Stewart of Edinburgh. Still, when Jenner did put his hand to the subject, his arguments were based upon a large and careful experience, and he treated it in a thorough and masterly manner, which finally forced the conviction of his contemporaries. It is well that these papers should be brought together in this form, that they may be made accessible to the present generation, who can thus realize how slowly a scientific truth which is to-day accepted as almost self-evident, won its way.

The well-known and excellent address delivered in 1879 before the Midland Medical Society at Birmingham, on the treatment of typhoid fever, is another of these contributions. Another series is formed by the Gulstonian Lectures for 1853, before the College of Physicians of London, on the acute specific diseases. The remaining pages are devoted to two lectures delivered in 1861 on diphtheria, and a clinical lecture delivered in 1875 on croup.

On Contractions of the Fingers and on "Hammer-Toe." By WILLIAM ADAMS, F.R.C.S., Eng., Consulting Surgeon to the Great Northern Hospital, etc. Second edition; 154 pages with eight plates and thirty-one wood engravings. London: J. W. A. Churchill. 1892.

This work comprises four essays, the first of which describes the deformity known as Dupuytren's contraction, the second and third "hammer-toe," and the last a method to remove or relieve depressed cicatrices. The first edition was published in 1879; the text has now been somewhat altered and new illustrations added. There is a *résumé* of the work done in England and America during the past ten years; and the description of "hammer-toe," with its treatment, has been introduced. The chapter describing the treatment of depressed cicatrices appeared in the first edition in almost the same form as now. The present edition, in addition to the above, includes results and observations of the past ten years, collected not only in the writer's individual practice but also from the work of other surgeons. The book is well arranged and has a good index. It is a well-written and interesting treatise; and the excellent illustrations add much to its value.

Essentials of Minor Surgery, Bandaging, and Venereal Diseases. By EDWARD MARTIN, A.M., M.D., Clinical Professor of Genito-Urinary Diseases, Instructor in Operative Surgery, etc., University of Pennsylvania, etc. Second edition, revised and enlarged, with 78 illustrations. Philadelphia: W. B. Saunders. 1893.

This little work, which is already well known, is one volume in the series known to medical students as the Saunders Question Compend; and treats of bandaging, certain details relating to minor surgical work, and venereal diseases. The present volume is a second edition, and has been revised to date. The illustrations show many changes; and those relating to bandaging are entirely new, the method used in the "American Text-Book of Surgery" being followed. The value of the volume has been much increased by its revision; and it contains much, in a very concise form, of interest to the practitioner and student.

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DIPHTHERITIC PARALYSIS.

DIPHTHERITIC paralysis generally manifests itself from eight to fifteen days after recovery from the local symptoms, though it may be delayed to a later period; in very exceptional cases it has been observed during the first week. This paralysis exists in one-third of the grave cases, according to Roger's statistics; it is not a rare sequel of benign diphtheria. The onset is generally slow and insidious. There is first only a little *hesitation* of the motor functions; deglutition, walking and other movements become more and more difficult.

The place of election of the paralysis is the velum pendulum, where it generally begins, and where it sometimes remains localized. A slight pallor, a little slowing of the pulse, are the only disturbances of the general state which are then noted. The reflux of liquid aliments by the nares indicates the impediment to deglutition. Extension of the paralysis to the pharynx generally supervenes, and the food can only be swallowed after repeated attempts, which soon fatigue the patient, and sometimes result in the refusal to take nourishment. Loss of voice testifies to paralysis of the larynx. The muscles of the eyes, of the neck, of the trunk, of the upper and lower extremities, of the rectum and bladder, even the special senses, are taken in the more complete forms of paralysis. More rarely the paralysis will attack the lower limbs before affecting the larynx and the tongue; and in a few cases it has been known to begin with the arms, then invade the soft palate and œsophagus, to attack finally the lower extremities.

It is a common experience to see troubles of vision supervene which are attributed to a fault of accommodation. The sight is enfeebled in different degrees, which may vary from slight amblyopia to complete blindness; there is hypermetropia, mydriasis, and, if but one eye is affected, inequality of the pupils. Almost all of the eye-muscles may be affected in turn.

The lower extremities generally begin to be paretic when these ocular troubles exist. The paralysis of the legs generally assumes the form of an incomplete

paraplegia. It is announced by formication and numbness in the legs. Walking becomes uncertain; the patient has an incomplete perception of the ground under his feet, and finds it especially difficult to go up and down stairs, or walk in the dark. A peculiarity of this form of paralysis is that the loss of motility in the feet and legs is never complete; the patients can move along by dragging or sliding their feet. When they are confined to their bed the lower limbs still preserve considerable power of movement, but without energy or much certainty. Jaccoud calls it an ataxy of movement, rather than paralysis. These ataxic symptoms, in conjunction with the abolition of the patellar reflex and the eye troubles, may give rise to a form of pseudo-tetanus. Contracture is very rare. The affected muscles present the ordinary reaction of degeneration; there is augmentation of the galvanic and diminution of the faradic contractility.

With regard to the condition of the hands, these become awkward and clumsy; patients drop or upset objects which they attempt to handle; tremblings resembling the tremors of paralysis agitans are frequently present. The muscular enfeeblement may be so great that the patient cannot feed himself. Paralysis of the face is a rare phenomenon. Bourges,¹ who has written a very complete description of the diphtheritic paralysis, and from whom we have here borrowed, gives a graphic account of cases which he has witnessed when the syndrome of labio-glosso-laryngeal paralysis was perfectly reproduced; the tongue, lips, cheeks, larynx being simultaneously affected.

Troubles of the sensibility are very frequent in diphtheritic paralysis, and almost always have to do with the regions affected with akinesic troubles. The ordinary alteration of sensibility is anæsthesia; exceptionally there is hyperæsthesia which manifests itself in the lower limbs by numbness and formication, and generally precedes the akinesia. Frequently the anæsthesia when it exists does not extend above the knees and elbows, but it may be general. It is sometimes accompanied with analgesia so complete that (Bourges says) cutting operations have been performed without ether. The anæsthesia may affect the lips, tongue and cheeks, and in rare cases the special senses, hearing, smell and taste have been abolished. The speech is often hesitating, stammering.

A capital fact in diphtheritic paralysis, says this same writer, and one that distinguishes it from all other paralyzes by peripheral neuritis, is that there is no muscular atrophy; the paralyzed limbs always retain their normal aspect and volume.

In very rare instances, the velum pendulum is not affected, and the disease is located in one muscular group or region without affecting other groups or other parts. Such are the cases where the paralysis has taken the paralytic or hemiplegic form, where it is limited to the eye muscles, to an arm, a leg, a hand, etc. Cases complicated with diaphragmatic paralysis are especially dangerous.

¹ H. Bourges: La Diphthérie, Paris, 1893.

In the localized and partial form, the paralytic accidents may be transient, and disappear in a few days. When the paralysis is general, its course is slow, lasting sometimes weeks and even months. Diphtheritic paralysis generally terminates in recovery (eight times out of ten, according to Bourges). In favorable cases, the power of movement reappears first in the lower limbs, then in the throat, then in the arms and hands, the trunk, the viscera and the eyes. Generally, the organs to be first paralyzed are the first to get well, but there is no fixed rule even here, and it often happens that the velum pendulum is the first part to be affected, and the last to resume its functions.

We have said nothing about those forms of infectious paralysis in which the heart and respiratory muscles are affected. These varieties are much more grave, for death then occurs often from syncope or asphyxia.

These paralytic results of diphtheria have been reproduced in animals in the experiments of Roux and Yersin.

THE ACTION OF PERMANGANATE OF POTASSIUM IN RENDERING MORPHIA INERT.

At a meeting of the medical and surgical staff of the West Side German Clinic, 42d Street, New York, Dr. William Moor, one of the physicians to the clinic, recently gave a demonstration on his own person of the efficacy of permanganate of potassium as an antidote for morphia. Against the earnest protestations of those present, he swallowed three grains of sulphate of morphia in solution, and immediately afterwards he drank a solution of four grains of the permanganate in four ounces of water. He was carefully watched, but none of the ordinary effects of morphia on the system were observed, and he has since stated that he experienced no ill effect whatever from the poisonous dose taken.

Dr. Moor, who has made a special study of therapeutics and toxicology, is twenty-eight years of age, and an Austrian by birth. He studied two years in Berlin and one in Paris, and is a graduate of the College of Physicians and Surgeons, New York. He states that previous to the demonstration mentioned he had experimented with rabbits, and also on his own person. He at first took an eighth of a grain of morphia, then a quarter of a grain, then half a grain, and finally three-quarters of a grain; and when he took permanganate of potassium afterwards there was no apparent toxic effect from the morphia.

In his demonstration at the German Clinic he would have been perfectly willing, he says, to take six grains of morphia, instead of three. Morphine, or any of the salts of opium, he claims, is immediately rendered harmless by contact with the permanganate. The antidote at once seeks the poison, passing by the other substances in the stomach. The soluble salt is acted upon by the permanganate 75,000 times more quickly than albumen, and several thousand times more quickly than peptone. Of course, the antidote should be ad-

ministered as promptly as possible after the morphia is taken.

Since this demonstration it has been claimed that the honor of the discovery is really due to Dr. William Condy, of London, and that Dr. J. B. Mitchell and other writers have referred to the efficacy of permanganate of potassium as an antidote; but, at all events, it is certainly true that its action in this regard has never been generally recognized by the profession. Lacerda recommended permanganate as an antidote to serpents' poison. Experiments indicate that it destroys the constitution of such poisons when brought into direct contact with them, but, when introduced into the general system, does not control their action.

Dr. Moor is now engaged in making a series of experiments to test the power of the permanganate as an antidote against strychnia, cocaine and other poisons. In the case of the first named, its action is said to be much slower than upon morphia.

Morphia is well known to be a powerful reducing agent, and it is doubtless by oxidation that the permanganate acts. As with serpent poison, so with morphia, it is undoubtedly essential that the permanganate should enter into direct contact with it. After the morphia has been absorbed the permanganate can have no action upon it. This physiologico-chemical restriction necessarily limits very much any value as an antidote which it may be proved that it possesses. Really, as we have already hinted, the most surprising thing about this incident which has attracted much attention in the daily press, is the fact that the action upon each other of two substances whose properties are so well known as are those of morphia and permanganate, should not long since have been accurately determined and described and been generally recognized. As a matter of fact, the usual therapeutic text-books and toxicologies are silent on this subject.

MEDICAL NOTES.

HONORS TO DR. BILLINGS.—Dr. Billings, Surgeon-General of the United States Army, has been elected an honorary member of the Royal Academy of Medicine of Belgium, and also a member of the International Statistical Institute, whose headquarters are at Rome.

PHYSICIANS IN THE VIRGINIA LEGISLATURE.—It is a little unusual to find physicians actively engaged in politics; but there are eight physicians in the present legislature of Virginia. Seven of them are Fellows of the State Medical Society.

APPOINTMENT TO THE CHAIR OF MIDWIFERY IN GLASGOW.—Dr. Murdoch Cameron has been appointed to the chair of Midwifery in the University of Glasgow.

EIGHT INSANE PATIENTS BURNED TO DEATH.—The building on the Boone County (Iowa) Poor Farm used as an insane asylum was burned to the ground

January 23d, and eight of the nine inmates were burned to death. Four of the patients were locked in their rooms, and could not have escaped even if they had tried. The others were not intelligent enough to try, and were surrounded by fire before help could reach them.

THE LETTSOMIAN LECTURES. — The Lettsomian Lectures this year are now being given by Mr. Frederic Treves, F.R.C.S., who has chosen "Peritonitis" as his subject.

"THE GRAND OLD MAN" OF MEDICINE. — The *Medical Press and Circular* gives a new title to the Autocrat of the Breakfast Table in the following bit of news. It would lead its readers, however, to infer by analogy that Sir Spencer Wells had written the poems of Thomas Hood.

"The 'Grand Old Man' of Medicine seems to be Dr. Oliver Wendell Holmes. The College Club, of Boston, recently gave a reception in his honor, and about five hundred persons were presented to him. He received them as he sat 'in a laurel-decorated chair under a bower of palms.' During the course of the proceedings Dr. Holmes recited 'The Last Leaf,' 'Dorothy Q.,' and 'The Chambered Nautilus,' all of which must have been intently listened to. Truly, we have no one in this country, of similar standing belonging to the profession, who could perform such a feat. Fancy Sir Spencer Wells, for example, reciting 'The Dream of Eugene Aram' at the *conversations* of the Medical Society!"

THE HARVARD MEDICAL SOCIETY OF NEW YORK CITY. — At the meeting held on January 27th, the following officers for 1894 were elected: President, Reynold W. Wilcox, M.D.; Vice-President, Royal Whitman, M.D.; Secretary and Treasurer, Dillon Brown, M.D.; Executive Committee, J. Winken Brannan, M.D., Frank H. Daniels, M.D., and Howard Lillenthal, M.D.

BOSTON AND NEW ENGLAND.

SMALL-POX IN BOSTON. — During the week ending at noon, January 31st, there was one death from small-pox. No new cases have occurred.

A BEQUEST TO THE CHILDREN'S HOSPITAL OF BOSTON. — The will of Mr. C. C. Gilbert, of Bridgewater, bequeaths the sum of \$3,000 to the Children's Hospital of Boston.

SMALL-POX IN MASSACHUSETTS. — During the week ending at noon, January 31st, there were reported to the State Board of Health three cases of small-pox from places outside of Boston, one each from Lowell, Brookline and Worcester.

SALEM HOSPITAL REPORT. — During the year just closed there were treated in the Salem Hospital 318 patients: 178 medical, and 140 surgical. There were 153 males and 165 females.

TYPHOID FEVER AT LOWELL, MASS. — Since the first of the year, seventy-three cases of typhoid fever have been reported to the Board of Health in Lowell,

and during the last week many new cases have occurred. The prevalence of the disease is ascribed to the use of Merrimac River water, since in two wards which are supplied with water from the driven wells in experimental operation, there is scarcely any typhoid. Those who are ill in these districts have been at work in quarters where the river water only is supplied.

VACCINATION IN VERMONT. — The State Board of Health of Vermont, at its meeting in Burlington last week, voted to recommend a general vaccination throughout the State, in consequence of the prevalence of small-pox in Boston and New York and the signs of scattered infection in other New England places.

NEW YORK.

RED LIGHT ON SMALL-POX. — It is announced that one of the small-pox pavilions at the Riverside Hospital on North Brother Island is to be fitted up with red-glass windows, and with red-glass globes for the lights used at night, in accordance with the alleged discovery that the skin of small-pox patients is extremely sensitive to the violet-colored rays of light, and that it is these which give rise to the pitting. The experiments which it is claimed demonstrated this fact was made by Dr. Lindholm and Finsen, in the City Hospital at Bergen, Norway, and was detailed in a recent article in this JOURNAL (January 11, page 35). New York will therefore be the first city in this country to try the efficacy of the red light, which is the same as that used by photographers in developing sensitive plates.

SMALL-POX ON THE INCREASE. — Small-pox seems to be on the increase, and several cases have recently been reported from charitable institutions in the city and on the islands, as well as at Charity Hospital, Blackwell's Island.

DIPHTHERIA. — There has been a considerable increase in diphtheria this season as compared with last year. From the 1st of January to the 24th there were reported 767 cases as against 382 in the same period in 1893. The mortality is said to be about 33 per cent.

A NEGRESS WHO KNEW WASHINGTON. — There recently died at the Colored Home and Hospital on First Avenue a negress by the name of Sullivan, at the extreme age of 107 years. The correctness of her age is said to be attested by a Bible in the possession of her son, who is now over 65 years old. The life of this ancient woman is quite an interesting one. She was the daughter of Philip Pickering, who fought under Gen. Francis Marion in the War of the Revolution. She was born a slave in the Carroll family, in 1785, and in later days often recalled a visit made with her master and mistress to General Washington, at Mount Vernon. By the dying request of her mistress, she was given her freedom, and she then removed to Washington. Here she entered the service of the Buchanan family, and on one occasion had the honor of waiting upon the guests at a banquet given to

La Fayette, who personally complimented her. She was married in Washington, and in 1829 removed to New York. One of her brothers fought under General Jackson at the battle of New Orleans, and when the latter became President, he gave him a position as assistant gardener at the White House.

Miscellany.

EXTERNAL INDICATIONS OF INHERITED LONGEVITY.

THE December meeting of the New York Academy of Medicine was devoted to a discussion of various factors influencing longevity, either directly or relatively. Dr. Morris, in speaking of the constitutional inheritance, said that in most cases the line of inheritance could be very fairly determined by the careful observation of certain external indications—as color, motions and measurements.

“One of the most certain indications of long or short life was the size of the head, for in the brain lay the great centre of power. A person with a head whose diameter at the thin portion of the temporal bones measured five and a half to six inches was almost sure to give a longevity on the father's side of seventy to ninety years or over. If the head measured in front from the external auditory canal to the naso-frontal suture as much as four and three-fourths or five inches, we might be almost sure of long life on the maternal side. A beard which was darker or redder than the hair, indicated inheritance from the paternal side; if it were lighter than the hair, the inheritance was probably from the maternal side.”

THE NEW RATIONAL WAY TO SLEEP.

DR. WILHELM FISCHER, according to *La Médecine Moderne*, has recently completed some researches into the proper method of sleeping. He says that to sleep well, that is, to obtain the quickest and surest intellectual rest, a person should lie with the head low and the feet elevated at least to the horizontal. The ordinary method is entirely wrong. The difficulty in becoming used to this proper method of flushing the brain to rest is not so very great if one has patience to begin gradually. “Each fortnight the sleeper is to discard one pillow until he can sleep on a level.” The time required for this is not stated. It must depend upon the number of pillows started with; and from the manner of mention this might be many dozen. But, to return to the directions; after being accustomed to the level position, the would-be-sleeper-*comme-il-faut* places his feet each night in a higher plane than his head, increasing the incline by adding the discarded pillows until finally he slumbers peacefully with his head on the mattress and his feet on many pillows.

This attitude has, he says, “a marvellously curative effect on many diseases, especially in nervous and anæmic patients; but its real and crowning triumph is in the treatment of varicose veins, hæmorrhoids, floating kidney, basic pulmonary disease and erotic dreams.”

If this highly rational way of sleeping becomes as general as it should, we may expect to see a new style of bedsteads put upon the market built like the kangaroo, with long legs at the lower end.

THE PLEASURES AND REWARDS OF A PHYSICIAN'S LIFE.

IN his commencement address at Lafayette College last June, Dr. William W. Keen, of Philadelphia, gave the following picture of the pleasure and satisfaction of the busy physician, which we reprint at the request of another eminent professor:

“Sir Spencer Wells, as the net result of his first 1,000 ovariectomies added 20,000 years to human life; and so far has modern surgery surpassed this result that every thousand similar operations to-day adds not less than 80,000 years to human life! Think what one of these lives means, as the pale cheek regains its color, the feeble pulse its force, strength succeeds weakness, each day records a gain, and finally health is re-established. The tender father returns to his usual pursuits; the adored mother once more becomes the centre of loving care of her family; the beloved child is restored to the family circle with ruddy health, rescued from the valley of the shadow of death itself. The hushed voices, the soft tread of the sick-room have given place to the laughter of health; the mists of sorrow are driven away; the anxious alarms of disease have vanished. What, think you, can equal the joy of the physician, as he views this happy transformation? Who is a dearer, more cherished, more welcome friend than he? Who finds a warmer place by the fireside and in the very hearts of his patients? No one can adequately appreciate his profound joy, his daily delight, his deep gratitude to the ‘Giver of every good and perfect gift.’ Oh, my friends, it is a blessed profession, a divine calling, with a heavenly recompense on earth!”

THE SOLUTION OF THE NEGRO RAPE PROBLEM.

THE solution of the yearly more serious problem of negro rape in the South is a most difficult but important task. Lynching, with its attendant tortures, has proved as useless as it is atrocious.

In the November number of the *Virginia Medical Monthly*, Dr. Lydston strongly advised legal castration as a remedy; and he is supported in a more recent issue of the *Texas Medical Journal*, by Dr. Daniel. The quieting effect of this treatment upon each criminal would, of course, be efficient for that one man, but it is doubtful how far it would carry a deterrent warning to other negroes in the blinding heat of lust.

Dr. P. C. Remondino, in the January number of the *National Popular Review*, urges the adoption, not of expiatory laws, but of preventive legislation. It is not rational, he claims, to look upon the unbridled licentiousness of the negro as solely a racial trait. The negro child, especially the male, is subject to many nervous disorders from slight irritation, and this characteristic he carries with him to adult life. Accordingly, Dr. Remondino sees in the removal of “an irritating and ulster-proportioned prepuce” the efficient and gentle means of stopping the sexual crimes and improving the moral system of the negro race. He says:

“Although the male Jews are much given to unholy and unedifying carnal pursuits, and in that field make records only equalled by the great Nimrod as a hunter, still, we never hear of a Jewish rapist.

“From our observation and experiences in such cases, we feel fully warranted in suggesting the whole-

sale circumcision of the negro race as an efficient remedy in preventing the predisposition to indiscriminate raping so inherent in that race. We have seen this act as a valuable preventive measure in cases where an inordinate and unreasoning as well as morbid carnal desire threatened physical shipwreck: if in such cases the morbid appetite has been removed, or at least brought within manageable and natural bounds, we cannot see why it should not—at least in a certain beneficial degree—also affect the moral stamina of a race proverbial for the leathery consistency, inordinate redundancy, generous sebaceousness and general mental suggestiveness and hypnotising influence of an unnecessary and rape, murder and lynching breeding prepulse. It would certainly be more humane for a State legislature to pass an act legalizing and enforcing circumcision as a preventive measure, just as it would enforce either vaccination or quarantine regulations, than to enact laws to castrate or eunuchise the accused after his infraction of the law."

Correspondence.

THE PREVALENCE AND RECOGNITION OF SCABIES.

BOSTON, January 25, 1894.

MR. EDITOR: In the JOURNAL of September 16, 1886, a paper entitled "Clinical Notes on Scabies," by Dr. F. B. Greenough, was published, in which mention of the increased prevalence of the itch was made, and the suggestion offered that it might be well for boards of health to consider measures looking toward its control.

In the JOURNAL of February 7, 1889, there appeared an article by Dr. J. C. White, on "The Increasing Prevalence of Scabies," which needs no comment.

Lastly, in the JOURNAL of October 19, 1893, under the heading of "The Increasing Prevalence of the Itch," the statistics of Dr. Stelwagon, of Philadelphia, are quoted, as bearing upon this point.

Since the publication of Dr. White's and Dr. Greenough's papers, scabies has continued to present itself at the hospital clinics with great frequency, and often four or five new cases are recorded in a single morning. In private practice also it is in no sense a rarity, and instances of its occurrence in people of the best social class are not unusual. The importance of recognizing scabies cannot therefore be overlooked; and the conviction that a great deal of annoyance and suffering, as well as in some measure the propagation of the disease, might be avoided by prompt treatment, has led me to add my voice to those of my colleagues.

It is true that scabies, especially in a cleanly person, may sometimes offer much perplexity to the diagnostician; yet these cases are always in the minority, and even in them it is usually possible to decide the question by treatment.

The point to be borne in mind, it seems to me, is that in any itching affection, where marks from scratching or eczematous appearances are present to however slight a degree, the possibility of scabies should be entertained and excluded, before the patient is allowed to go on his way with a prescription for a mild antipruritic lotion, and perhaps a favorite tonic internally.

The frequent failure to recognize is undoubtedly due to the increased prevalence, and to the false presumption that scabies is almost unknown in cleanly people. Formerly, as Dr. White has stated, it was almost impossible to find sufficient material for class demonstration. For these reasons largely, this common affection is now frequently unrecognized, and apparently unsuspected, by practitioners of the highest medical attainments.

JOHN T. BOWEN, M.D.

METEOROLOGICAL RECORD.

For the week ending January 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer		Relative humidity		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..14	30.10	25	32	18	81	50	56	W.	E.	14	4	O.
M..15	30.10	36	45	28	69	77	73	S.W.	S.W.	14	10	O.
T..16	30.00	40	44	36	96	77	86	W.	N.	4	17	O.
W..17	30.68	22	27	18	62	56	59	N.	N.	14	14	O.
T..18	30.54	28	37	18	66	78	72	N.W.	S.W.	4	10	O.
F..19	30.42	36	42	30	87	84	86	W.	N.	10	14	O.
S..20	30.63	26	32	20	52	71	62	N.W.	N.E.	9	6	C.
W..21	30.35	37	24				70					.39

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. *avg.* Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 20, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.	
New York	1,891,306	888	346	17.71	21.45	.60	9.46	.55	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	—	—	—	—	—	—	—	
Brooklyn	978,394	380	143	11.44	31.46	.52	7.02	1.30	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	467,307	229	74	15.84	24.64	.44	5.80	1.76	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	111	28	6.30	18.00	4.50	1.40	—	
Cincinnati	305,000	119	43	7.65	27.20	3.40	2.55	—	
Cleveland	290,000	95	32	18.90	23.10	4.20	6.30	4.20	
Pittsburg	283,709	80	34	15.00	15.00	1.25	5.00	1.25	
Milwaukee	250,000	73	46	9.59	16.44	—	1.37	1.37	
Nashville	87,764	32	12	12.54	18.78	—	3.13	—	
Charleston	65,165	34	—	—	5.8	—	—	—	
Portland	40,000	15	0	6.66	13.33	—	—	—	
Worcester	96,217	36	13	18.90	30.58	—	15.12	—	
Fall River	87,411	27	11	14.50	29.60	—	3.70	—	
Lowell	87,191	37	7	16.20	37.50	5.40	—	—	
Cambridge	77,100	32	18	28.17	18.78	—	12.52	15.65	
Lynn	62,666	15	3	—	26.66	—	—	—	
Springfield	48,684	15	3	—	26.66	—	—	—	
Lawrence	48,365	14	4	7.14	—	7.14	—	—	
New Bedford	45,886	28	14	17.85	17.85	—	3.57	3.57	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	11	2	9.00	—	—	—	—	
Brookton	32,140	—	—	—	—	—	—	—	
Haverhill	31,896	8	3	—	12.50	—	—	—	
Chelsea	30,264	14	8	7.14	28.56	—	—	7.14	
Malden	29,394	7	2	—	14.28	—	—	—	
Newton	27,556	11	0	18.18	18.18	—	—	18.18	
Fitchburg	27,146	5	3	—	20.00	—	—	—	
Taunton	26,972	10	1	—	20.00	—	—	—	
Gloucester	26,688	2	1	—	—	—	—	—	
Waltham	22,068	9	2	22.22	11.11	—	22.22	—	
Quincy	19,642	5	2	20.00	20.00	—	—	—	
Pittsfield	18,802	2	1	—	—	—	—	—	
Everett	16,585	5	1	20.00	60.00	—	—	—	
Northampton	16,331	5	1	—	40.00	—	—	—	
Newburyport	14,073	2	1	—	—	—	—	—	
Amesbury	10,920	4	1	25.00	25.00	—	—	25.00	

Deaths reported 2,399; under five years of age 869; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 341, acute lung diseases 566, consumption 289, diphtheria and croup 163, measles 33, typhoid fever 29, scarlet fever 28, diarrhoeal diseases 23, whooping-cough 21, cerebro-spinal meningitis 17, erysipelas 11, small-pox 11, malarial fever 5.

From measles New York 24, Milwaukee 4, Brooklyn 3, Boston and Nashville 1 each. From diarrhoeal diseases New York 11, Fall River 3, Boston and New Bedford 2 each, Milwaukee, Portland and Salem 1 each. From whooping-cough New York 3, Pittsburg 5, Brooklyn 3, Boston and Cincinnati 2 each, Brookline 1. From cerebro-spinal meningitis New York 8, Cleveland 4, Brooklyn 2, Worcester, New Bedford and Everett 1 each. From small-pox New York 6, Boston 3, Lowell 2. From ery-

apeles New York 5, Boston 3, Brooklyn 2, Somerville 1. From malarial fever New York and Nashville 2 each, Pittsburg 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending January 13th, the death-rate was 28.6. Deaths reported 5,726; acute diseases of the respiratory organs (London) 762, whooping-cough 219, measles 108, diphtheria 78, scarlet fever 52, fever 47, diarrhoea 36, small-pox (Bradford 3, Birmingham 2, London, West Ham and Nottingham 1 each) 8.

The death-rates ranged from 19.5 in Gateshead to 50.2 in Norwich; Birmingham 31.6, Bradford 21.9, Cardiff 24.2, Halifax 23.0, Leeds 27.0, Liverpool 33.3, London 29.5, Manchester 30.8, Newcastle-on-Tyne 20.7, Plymouth 55.7, Sheffield 24.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 20, 1894, TO JANUARY 26, 1894.

FIRST-LIEUT. EUCLID B. FRICK, assistant surgeon, U. S. A., is relieved from duty at Fort Keogh, Montana, and ordered to Fort Townsend, Washington, for duty at that post, relieving CAPTAIN ROBERT R. BALL, assistant surgeon.

CAPTAIN BALL, on being relieved by FIRST-LIEUT. FRICK, will report in person to the commanding officer, Fort Monroe, Virginia, for temporary duty.

FIRST-LIEUT. MADISON M. BREWER, assistant surgeon, will, upon the arrival of CAPTAIN BALL, be relieved from temporary duty at Fort Monroe, Virginia, and will return to his proper station, Fort Riley, Kansas.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 27, 1894.

J. L. NEILSON, surgeon, from Naval Medical Examining Board and to Boston Navy Yard.

R. A. MARMION, surgeon, from Boston Navy Yard and to Smithsonian Institution.

C. U. GRAVATT, surgeon, from Smithsonian Institution and to the "Dale."

E. H. GREEN, surgeon, from the "Dale" and to the "Marblehead."

A. C. H. RUSSELL, passed assistant surgeon, ordered as member Naval Medical Examining Board.

T. A. BERRYHILL, passed assistant surgeon, ordered to duty at Naval Laboratory and Department of Instruction.

H. J. BABIN, surgeon, ordered as member of Board of Inspection Survey.

F. L. DuBois, medical inspector, and C. A. SIEGFRIED, surgeon, appointed delegates to the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING JANUARY 20, 1894.

BAILHACHE, P. H., surgeon. Detailed by the president as delegate to International Sanitary Conference in Paris, France. January 15, 1894.

SAWTELLE, H. W., surgeon. Detailed as chairman, Board for physical examination of officers, Revenue Marine Service. January 19, 1894.

AUSTEN, H. W., surgeon. To represent the service at International Medical Congress, Rome, Italy. December 16, 1893.

STORER, G. W., surgeon. Granted leave of absence for seven days. December 22, 1893.

LEWIS, FAIRFAX, surgeon. To proceed to St. Petersburg, Russia, for duty. December 28, 1893. To proceed to Paris, France, for temporary duty. January 16, 1894.

CARTER, H. W., surgeon. To report at Bureau for temporary duty. December 17, 1893.

BANKS, C. E., passed assistant surgeon. Detailed as recorder, Board for physical examination of officers, Revenue Marine Service. January 19, 1894.

PECKHAM, C. T., passed assistant surgeon. Granted leave of absence for seven days. January 6, 1894. Granted leave of absence for six days. January 11, 1894.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for five days. December 20, 1893.

BROOKS, S. D., passed assistant surgeon. To proceed to Sandusky, Ohio, as inspector. January 17, 1894.

WHITE, J. H., passed assistant surgeon. Granted leave of absence for thirteen days from December 18, 1893.

—, passed assistant surgeon. Granted leave of absence for thirteen days from December 18, 1893.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for fourteen days. January 17, 1894.

BRATTON, W. D., passed assistant surgeon. To proceed to Wilmington, N. C., for duty. January 9, 1894.

WOODWARD, R. M., passed assistant surgeon. Granted leave of absence for ten days. December 18, 1893. Granted leave of absence for fourteen days. January 17, 1894.

STORER, J. B., passed assistant surgeon. To proceed to Marshfield, Oregon, as inspector.

GUIERAS, G. M., passed assistant surgeon. To proceed to New Orleans, La., for duty.

PERRY, J. C., passed assistant surgeon. To proceed to Norfolk, Va., for temporary duty.

YOUNG, G. B., assistant surgeon. Granted leave of absence for three days. January 1, 1894.

BROWN, B. W., assistant surgeon. Granted leave of absence for thirty days. December 16, 1893.

ROSENAU, M. J., assistant surgeon. To proceed to Evansville, Ind., for temporary duty. January 13, 1894.

GARDNER, C. H., assistant surgeon. To proceed to San Francisco Quarantine for temporary duty. December 22, 1893.

NYDEGGER, J. A., assistant surgeon. Granted leave of absence for twenty-three days. December 20, 1893.

OAKLEY, J. H., assistant surgeon. Granted leave of absence for twenty-five days. December 20, 1893.

NORMAN, SEATON, assistant surgeon. Granted leave of absence for thirty days. January 15, 1894.

PROCHAZKA, Emil, assistant surgeon. To proceed to Louisville, Ky., for duty. December 26, 1893.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at 19 Boylston Place, on Monday, February 5th, at 8 o'clock.

Dr. Charles M. Green: "Four Unusual Cases: (1) Imperforate Hymen, with Hematocolpos; (2) Cysts of the Vagina; (3) Recto-vulvar Fistula; (4) Salivation of Pregnancy."

Dr. J. E. Goldthwait: "Some Observations upon the Etiology and Treatment of Anterior Metatarsalgia."

JOHN C. MUNRO, M.D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Surgical Section will hold its regular monthly meeting at 19 Boylston Place, February 7, 1894, at 8 o'clock.

Dr. Gardner W. Allen: "A Case of Litholapaxy."

Dr. E. H. Bradford: "Investigations of Flat-Foot."

Dr. Otis K. Newell: "The Intermittent Rapid Dilatation of Urethral Stricture."

CHARLES L. SCUDDER, M.D., Secretary, 1 Marlborough St.

RECENT DEATHS.

CHARLES COLBY PIKE, M.D., M.M.S.S., died in Peabody, Mass., January 27th, aged forty-nine years. He was born in New London, N. H. During the war he served in the Eleventh New Hampshire Regiment and was severely wounded at Fredericksburg. After the war he went to Dartmouth College, graduating in the class of 1869.

GEORGE TORREY GRIERSON, M.D., M.M.S.S., died in Lowell, January 28th, aged twenty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Dr. G. Zander's Medico-Mechanical Gymnastics; Its Method, Importance and Application. By Dr. Alfred Leverlin. With a portrait of Dr. Zander, several explanatory illustrations and a map. Stockholm. 1893.

Liquor Sedans, Saw Palmetto, Damiana, Pichi and Stylosanthes Eliator; Their Uses in Nervous Diseases; Their Medico-Legal Relation; Epilogue. By John J. Caldwell, Neurologist, of Baltimore, Md. Reprint. 1894.

Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By Charles W. Cathcart, Conservator, Fellow of the College. Vol. I. The Skeleton and Organs of Motion. Edinburgh: James Thin. 1893.

Climates of the United States in Colors. Popular edition of Denison's Charts, with additions. By Charles Denison, A.M., M.D., Denver, Colo., Professor of the Diseases of the Chest and of Climatology, Medical College, University of Denver; Ex-President of the American Climatological Association. Chicago: The W. T. Keener Co. 1894.

Lectures.

LECTURES ON SURGERY.

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery in Harvard University.

XXIV.

DISEASES OF THE NOSE.

Epistaxis. — I will speak at once of the most common affection surgically that we have to treat in the nose, and that is epistaxis or nose-bleed. It comes from a variety of causes. In a certain proportion of cases it is wholesome and useful. It depletes very rapidly the venous sinuses at the base of the brain. There is a direct communication with the veins of the nose through the cribriform plate of the ethmoid and with the base of the brain; and in youth, in violent exercises, in persons who are plethoric, etc., moderate nose-bleeds frequently are useful, and if not excessive, need not excite anxiety. In old age, however, in elderly people, nose-bleed, when it amounts to anything, is frequently the sign of some congestion in the head which should warn us that the patient may be in danger of rupturing a vessel and having apoplexy. Nose-bleeds in old people are rather unfavorable signs as regards the prognosis of future life. Something is apt to take place after this warning is given; and we should be very careful about the diet and exercise of such patients. But nose-bleed only becomes injurious in younger subjects when they either are the subject of some other disease, a diseased condition of the blood or constitutional disease; or else when it becomes very frequently repeated, apparently from the state of anæmia, thinness of the blood and weakness of the walls of the veins. Typhoid fever, diseases which affect the blood, as purpura, or profound anæmia, are frequently associated with nose-bleed. Occasionally, as you know, it is merely vicarious, so to speak, occurring in the place of habitual discharges in other directions; especially the menstrual flow in the female is sometimes supplemented, or aborted, by the frequent occurrence of nose-bleed. So also, certain patients who have trouble about the rectum and bleed from piles, occasionally have this arrested, and then have epistaxis follow. This is not so severe, and should not be classed with those cases which are what is called true bleeders, where there is that peculiar constitution of the blood that it lacks the fibrinous sticky element, and cannot coagulate when thrown out from the vessels. These patients may bleed from any point: from the gums; mucous surfaces like the urethra, and sometimes from the skin, making a bloody exudation from the true skin. This is associated with a condition of the blood which is usually inherited. Such cases are not very frequent. They can hardly be classed as the ordinary accidents of nose-bleed. Any acute disease of the liver, which is going on to a fatal condition, is frequently followed by hæmorrhage; hæmorrhage by the nose and mouth and bowel is one of the common results. In typhoid fever, where the fever seems to expend itself and its force on the head and nervous system, bleeding from the head and nose seems to take the place of bleeding from Pylers' patches.

Ordinary nose-bleed need occasion no alarm. It is

best arrested by keeping the patient in the upright position, applying cold, avoiding stooping over; sometimes it can be arrested by keeping the hands above the head a little while; frequently by the application of cold to the spine, or cold over the forehead, or cold, in the form of pieces of ice held in the mouth, where it will press against the palate process. These measures are simple ones and are generally sufficient. When they are not sufficient, frequently the putting of a small plug of lint in the nostril which is bleeding, especially if it is dusted over with a little dried persulphate of iron, succeeds. Syringing out the nose with cold water is sometimes effectual. These measures are enough for simple cases; but the cases which excite alarm are those where the bleeding goes on almost without stopping, but with remission, for, perhaps, an entire day. The patient becomes gradually quite feeble and exhausted. The respirations are very much impeded by the enormous clots that form in the nasal passages, and which temporarily arrest the bleeding; but it keeps breaking out. If the patient lies down from faintness, the blood goes on trickling slowly backwards and large quantities of blood run down the pharynx, and are swallowed. Then, after a while, the stomach being distended by clots rejects these; vomiting comes on and that starts the nose-bleed again. So in one of these bad cases, I suppose, if they went far enough, a fatal result might ensue; though usually they are stopped before that result is reached.

Simple measures are of no use in these forms; and the most thorough way to arrest the bleeding is by plugging the nose, the anterior and posterior nares as well. Each nostril is a separate cavity. It is rarely that bleeding occurs from more than one nostril at a time: and the bleeding nostril is plugged front and behind, and the plugs left in thirty-six to forty-eight hours. Some surgeons advise leaving them three or four days. The objection is that they soon become very foul and offensive, and provoke ulceration of the membrane covering the delicate bones inside the nose; and may, if kept in long enough, lead to caries of the bone, and a chronic state of ozæna with filthy discharge. It is always a delicate matter to decide the time when the plug shall be taken out in a bad case; but, as a rule, by forty-eight hours an attempt must be made to remove it carefully; and if bleeding occurs, a fresh plug may be put in, which is clean and aseptic, and may be left in considerably longer. It is perfectly easy to plug the anterior nares. To get a plug behind in the posterior nares is impossible without a guide. That guide must be a thread passed through the nostril, behind the soft palate, out of the mouth. The patient must open his mouth widely, a gag is put between the teeth, and the thread is carried through by a little instrument called Belocq's sound. The sound is threaded, passed through the nose, and the finger passed into the mouth catches the thread and draws it out, and the catheter is withdrawn; the other end is out of the nose. We have the location we wish to plug under control with this string. To the end which comes out of the mouth, must be fastened another double thread, and to this a small piece of lint or sponge, not too large. If a sponge, it will swell to a certain degree; but the lint will not swell. That must be tied with a double thread, and then passed into the mouth, and guided with the finger behind the palate, and pulled firmly into the posterior nares, so that it will not drop back into the throat. Another plug is put in front, and a string tied over it,

¹ These are unwritten lectures printed from the stenographers' reports. Verbal corrections are made in revision, but no rhetorical changes. They were delivered to the third and fourth classes as part of the regular course.

so that the two are pulled together. The cavity between is gradually filled by coagula, and bleeding is necessarily arrested. The use of the two strings on the back, where the plug is attached, is to leave one coming out of the mouth, which can be fastened around the ear, and which is a guide to the posterior plug. This is important, because in removing the posterior plug we wish to do it with as little excitement as possible, and if we have no guide, we are forced to take a catheter, or something of that kind, and put it in the nose and dislodge the plug, and catch it as it drops in the throat; whereas if we have a string guide, we cut the anterior string, take out the anterior plug, and pull on the string in the back of the mouth, and easily withdraw the plug. This may make the difference between starting the bleeding, and having to plug over again. To our surprise we see how much suffering is produced by this plugging in the first twenty-four hours. At first the patient is relieved of bleeding, and he can take nourishment and lie down and sleep; but he soon has pain in the nose and face and eyelids. All the parts about the cheek begin to have an oedematous swelling to a very marked degree; and the skin of the nose is largely distended by swelling, and the patient looks as if he had an attack of facial erysipelas coming on. This is due to the pressure of the plugs; and if they are left in too long, it may be followed by septic consequences and dangerous results. On taking out the plugs, the swelling slowly subsides, and the case is over.

A little rubber arrangement, which is very like what we call the colpeurynter used to dilate the cervical outlet, can be used. That can be flattened out and with a probe or director passed in until it projects into the posterior nares in the throat. When it has got fairly through the nostril, it can be blown up with air firmly, and it makes a sufficient air plug to the passage. Of course, it adapts itself perfectly to the shape of the nasal cavity, and makes a very ingenious and neat plug. When we have one of these it is easier to use and to remove than the more clumsy method of the sponge. In many cases we shall be called to a distance, to a case of nose-bleed, without these preparations, and we need not wait for Belocq's instrument; but with a good strong elastic catheter we can accomplish in a few moments the arrest of the hæmorrhage.

Deviations of the Septum of the Nose. — The septum is partly bony and partly cartilaginous. The cartilaginous part is thin and elastic, and covered with delicate mucous membrane and vessels and nerves. This frequently grows out of place, sometimes probably in consequence of a blow, and sometimes by a spontaneous deformity which pushes it to one side and gradually occludes one nostril. This condition leads to catarrh, retention of secretions on the side where the occlusion is, to change of the voice. When the disease goes on a little longer, and is not treated, changes take place in the septum itself; and as the young person grows older the septum thickens and grows out bony ridges and spurs which project on the occluded side and still more obstruct the nose. The septum can be broken and forced back into place in the early stages of the affection. It will not, however, stay there, but recoils just like a piece of birch bark. It can only be forced to stay back by cutting through it, and destroying its elasticity. In more severe cases it is often best to saw off a piece of the septum with a fine saw on the occluded side. The spurs are sawed

off, and a piece of the septum sawed off. We may or may not go through. Sometimes we can succeed in sawing off the spurs without sawing through into the other side of the nose, sometimes not. If we saw through, a small permanent opening is left. If it is too small, it is sometimes accompanied by a whistling sound in breathing, which is annoying. If it is opened, it is better to make it of sufficient size, that the air may travel back and forth without making this sound.

The septum is the seat of ulcerations which used to be thought to be syphilitic. They frequently are tuberculous. The ulceration may go so far as to perforate the septum, and the patient has an opening through the septum which is frequently the size of a dime or lead pencil. It does not make any external deformity whatever. It does not make the nose of that peculiar shape that it does in syphilis, when the vomer is cast off by caries. There is an obstinate ulcer, with a little hole leading through. Local applications of various kinds, and constitutional treatment, are the best things that can be done. Usually granulations can be encouraged; and if the septum is not eaten through, the ulcer can be healed. If it is, the hole can be healed around the margin so that it will not expand, and the patient get along very comfortably. It is important to recognize the fact that many of these ulcerations are in perfectly innocent parties with regard to either primary or inherited syphilis; and that they are quite common in young and scrofulous subjects.

The cartilage will not stand any very violent applications. If you try to cauterize it, anything of that kind, you make the cartilage ulcerate and break down more. Cleanliness and mild antiseptics and constitutional treatment should be employed.

The turbinate bones grow out of place, grow exostoses, project into the passage and frequently obstruct the breathing. Portions are frequently cut away with benefit, and sometimes the trephine is used and the turbinate bones cut through, giving the patient much deeper breathing power. Since the use of the electric light and the rhinoscope to look into the nose, and the minute electric wire which can be heated as a cautery, it is easy to burn off portions of the delicate bones of the nose with safety and without much suffering. Ether is not necessary. In fact that is not desirable where the hot wire is used, because we are in danger of setting the ether on fire. Cocaine is all that is necessary to blunt the sensibility enough to do this sort of operation.

Foreign Bodies in the Nose. — In a child with trouble in the nose your first thought should be is there any possible foreign body concealed in the nose. Infants and children are very apt to put substances up in the nose, and those are generally of a character that cannot be got out easily; beans and peas and buttons are favorite objects. They are pushed up far enough to get beyond the inferior turbinate bone, and are there held; provoke constant discharge, and other signs of chronic ozæna, or polypus. The child is frequently brought to the doctor with the idea that it has polypus. Careful search will find something hard in the nose; and the nose sprayed with cocaine and made non-sensitive, the foreign body can be got out, and the case is speedily cured.

Polypi in the Nose. — Polypi in the nose are of two forms. The common form is a soft, gelatinous polypus which grows from the turbinate bones, and sometimes

in extreme cases extends its growth up in little colonies of polypi which grow as high as the upper turbinate bone and even as high as the ethmoid. The ordinary soft polyp is attached to the inferior turbinate bone, floats or hangs in the nasal cavity, rises up and down with the movements of respiration. If the patient makes a forced expiration through the nose with the mouth shut the polypus can generally be brought into sight, and is seen lying as a white, soft, gelatinous-looking mass a little ways up the nasal cavity. Or when the patient inspires violently, it is drawn behind the turbinate bone and sometimes when it is large passes back of the posterior nares and hangs back into the throat. In extreme cases they protrude down the throat, and if the patient has the mouth held widely open and raises the palate by saying the word "ah" the polypus can be seen projecting in the throat behind the palatine arch.

The mucous polypus can be readily removed; but unfortunately this frequently does not permanently cure the affection. The tendency having been developed to their growth, others form. They are slow to form. They frequently do not show signs of returning for six months, but they are apt to come back. The nearest way to remove them is to locate them exactly by the aid of the mirror and remove by the snare or hot wire. If we have not this means, we can follow up the polyp and get hold of the stem and twist it off. It frequently brings away a little of the turbinate bone with it. This does no harm; and by removing the periosteum and root on which the polyp grows, that particular polyp is exterminated, and has no chance of starting again. We must not be satisfied with one search; but put the forceps throughout the nose, and frequently we succeed in extracting one large one, and two or three small ones. After a few days, when bleeding has subsided and the soreness gone, the nose can again be treated with cocaine, and investigated carefully with the lamp and mirror, to see if any others are left.

The signs of polyp are usually those of chronic catarrh and obstruction. They change in their shape and size; swell up with fluids and collapse again according to different states of the system; and where the patient has a slight cold and congestion, it increases the flow of blood to the mucous membranes and distends the polyp. A chronic catarrh running from the nose; accumulation of secretion; difficulty of breathing; snoring in the sleep, are signs of polypus. When enlarged they distend the nose, but must be of considerable size to do so.

On examination, the two sides of the nose do not correspond. In extreme cases the nasal bone becomes displaced to some degree as well as the cartilage, so that the nose is entirely flattened out on that side. These are unusual cases.

Ordinary soft, gelatinous, nasal polypi then are usually removed by one of these methods. Subsequently the nasal cavity must be treated by injections of weak carbolic acid and by astringents. Quinine sometimes is very useful; and various agents to endeavor to prevent the return. The milder forms of spray are the best to use in this cavity. The nasal douche, which is merely a repetition of the fountain syringe, is no longer thought to be as desirable as it used to be. It is too violent, too forcible, has occasionally made trouble by distending the Eustachean tubes, and has brought on affections in the middle-ear by being too forcibly

used. It is only in extreme cases of filthy ozæna, and where other measures will do no good at all, that the nasal douche is to be used. It is better to use the applications in the form of spray, applied both behind by the throat, and forward through the nose.

The person who has once had a mucous polypus must be on the lookout for others; and when the slightest signs present themselves, he should be inspected and the growths taken out, if possible. With the cauterizer the bases from which they grow, can be thoroughly destroyed; and, sometimes, after one or two operations, no more recur. Sometimes they recur after long intervals.

The other form is essentially a fibrous tumor, and is called sometimes the naso-pharyngeal polypus because it affects the posterior nares and the top of the pharynx. It grows sometimes from the edges around the nasal cavity, the little hollow of the pterygoid process; and sometimes about the posterior septum of the nose; and frequently, also, from what is called the occipito-sphenoid bone, the junction of the sphenoid and occipital at the true base of the skull. This, of course, is at the very top of the pharynx, and covered with mucous membrane; it is in a pouch at the top of the pharynx; and the fibrous tumor, we call the naso-pharyngeal polypus, frequently has its growth there. It obstructs the posterior nares; and in bad cases, can be seen from the mouth. It is not of uniform size; is generally pear-shaped, and has a stem and a large body. Occasionally the growths are broad and cover the whole of the occipito-sphenoid bone.

These growths most often occur in young subjects, during the period of about fifteen or sixteen to twenty-four or twenty-five years of age. They grow very slowly, and the patient first suspecting that he has chronic catarrh, finally becomes aware of something which obstructs the breathing. The surgeon, if he fails to see anything in ordinary inspection of the throat, can detect the trouble usually by passing a silver catheter, or elastic catheter on a wire, carefully curved, and gently through the nares down into the throat on one side; it will soon be found that the catheter strikes a prominent obstruction on one side, or the other, and the location of the trouble can be made out. With the electric lamp in the throat and the rhinoscope the tumor can be seen back of the palate. If we have not this means, we can diagnose by means of the finger. The patient's mouth widely open and the finger passed in, up behind the soft palate; with this we can explore both of the posterior nares. It is a disagreeable experience for the patient, but does not produce any harm, and only the sensation of momentarily choking, and perhaps a little bleeding. In that way we can locate the growth; determine its size; shape; attachment; and see on which side of the posterior nares and pharynx it lies.

Being there and increasing, it may go on to cause a fatal result; leading to trouble at the base of the brain; to destructive changes in the pharynx; finally hanging down as low as the epiglottis and back into the œsophagus, in marked cases; and obstructing swallowing, and endangering the patient from choking while breathing or swallowing. It is then evident that it is very important, as soon as the diagnosis is made, that this growth should be removed; and a great many ingenious modes have been used to do it. The simplest form is to attempt to snare it by the snare passed through the nares, or else up behind the soft palate. If a lucky

case with good pedicle, this may sometimes be done. Nélaton found that the soft palate presented a barrier to the last one-half inch, which was in the way of getting the snare around. He devised the operation of splitting the soft palate, and passing a thread through either tip of the uvula; drawing it aside, and fastening it outside the mouth; and then you gain one-half inch or more of space by which you can get access to the posterior pharyngeal region. Then the polypus was removed by snare or forceps; and the soft palate was sewed up again.

It has been found, however, that most of the operations of this class, which merely snare off the polyp, do not prevent its subsequent re-formation; and that it is essential that the base should be reached and scraped away, and the periosteal layer under the mucous membrane, be scraped away, in order to insure against the recurrence; so that in order to get at this space other operations were devised. One was to cut a piece of bone out from the speno-maxillary fossa, turn the bone back, and expose the whole nasal cavity; this was Langenbeck's method.

Another was to saw across the top of the antrum, beneath the zygoma; split the palate process, after extracting one incisor tooth; depress and break down one superior maxillary bone; leaving it hinged on the pterygoid process; then pass the finger through this gap, push the septum to one side, and get ready access to the point you wish. That is the operation that I have done a number of times.

Whatever operation of this kind is done, after the polyp is scraped away and removed, the jaw is pushed back to place and wired, and the wound closes, and the bone unites, as a broken jaw does, and gives no subsequent trouble.

When it is borne in mind that before these operations were devised the only other alternative to destroy these large fibrous tumors was to excise the upper jaw, you see how much we have gained in the point of conservative surgery.

The prettiest operation of all was devised by M. Ollier of Lyons. You would not suppose at first it would give the needed room, but it does. It consists in sawing down and depressing the nose. You make a cut from the centre of the forehead, down each side of the nose, to the point where the artery goes to the ala. Cut through the periosteum to the bone on each side. Having made that cut, you take a moderately narrow and quite flexible saw, lay it as flat as possible on the forehead, and saw down through the nasal bone, down to the cartilage; upset the nose and drop it down on the lips. The nasal cavity is fully exposed. The vomer and septum are in the way. They are flexible and can be pressed over; and you have the means of reaching to the growth of the polyp, which the finger will exactly do; and thus you can extract large polypi by forceps, or by scissors, or by seizing them and tearing them out; and subsequently you go in and scrape this cavity. In these cases it is well always to operate in the upright position; and when any sign of choking comes on, bring the patient's mouth well forward and drop the jaw until they expectorate. Half etherization is the best. Thorough etherization during the incision through the skin and sawing the bone; the patient partially awake through the remaining stages. Although they make a noise, they remember nothing which has occurred; and it is much safer to have the patient sufficiently awake to retain a little control over

the epiglottis. Subsequently to this the nose is replaced. Two fine wire sutures are passed through the lower angle of the nasal bone, which hold the bone perfectly in place. These are brought out through the wound, and the wound nicely stitched. The wires must be left in two or three weeks; two weeks in the nose, and three in the jaw. The wires loosen and ulcerate; the bone decays a little around the holes, and, afterwards, untwisting them, they are drawn out with ease, and the sinus closes. Very little scar is left by this operation on the nose. There need be no fear that there will not be union. All the parts about the upper jaw and nose are so thoroughly supplied with vessels that they repair very great injuries, and always unite.

Malignant Forms of Growth in the Nose. — These are sometimes mistaken for the ordinary polypus. Soft cancerous growths occur on the mucous membrane of the septum low down, just inside the nasal cavity. The parts become obstructed and the patient thinks he has a polypus. On lifting the ala and looking at this growth, you find it is red and very vascular, with little tuberosities on it shaped like a strawberry, or raspberry. It bleeds on the slightest touch; occurs almost always in people of middle age; and it is essentially a soft and rapid growth of epithelioma.

This must be thoroughly removed. Usually it can be done by a very slight operation, by cutting around the ala and turning it up and then the septum and the growth may be cut away, the ala replaced and the only subsequent deformity is the little scar on the side of the ala. If that is not sufficient, excision of the structures inside, with portions of the jaw, must be done. It is not very common. I will call attention to the fact that polypus growing low down, in the elderly person, probably means cancerous growth. True polypi are never, I think, attached to the septum, but always to the turbinate bones. These malignant growths frequently start from the septum itself.

Abcess of the Septum. — Abcess of the septum is a very painful affection. You are familiar no doubt with what is called the little boil that forms within the tip of the nose. It is extremely painful, lasts five or six days, finally breaks and discharges inside the nose. It leaves no subsequent trouble.

There is another form which is more severe: abcess of the septum. It produces a curious deformity. It fills up the nostril completely, so that in seeing this patient first you would suppose the whole nose was filled with an enormous, red, malignant growth; but you find the duration of the disease is not more than a week, or ten days. The nose begins to swell; pain occurs; and this rapid ballooning out of the mucous membrane comes on, and the nostril is occluded. You find it is elastic to the touch.

The treatment is to make free incision and let out the pus, which is followed by speedy cure.

Making of a New Nose. — Artificial noses of *papier maché*, nicely colored and of a pattern to suit the taste of the wearer, are much better than any artificial nose made from the skin.

AN EPIDEMIC OF MUMPS. — An epidemic of mumps has recently occurred in an English village, in which 96 out of the 130 children in the village were taken ill. Many adults were also afflicted, but the number of patients was not so carefully recorded.

INFECTIOUS APPENDICITIS.¹

BY ROBERT T. MORRIS, M.D., OF NEW YORK.

GENTLEMEN:—There is only one way to prevent deaths from appendicitis, and that is to prevent deaths from appendicitis. Do you not know how? I do. So do you. Then let us cast the killick right here, and allow the restless, changing tides of argument to wash by as they will.

We have lost enough brothers and sisters and sons and daughters unnecessarily from appendicitis. Do not fail to remember the word "unnecessarily," when you long for the "touch of the vanished hand and the sound of the voice that is still."

For ten years we swarmed about the subject of appendicitis, trying first one hole and then another in a hunt for rules for guidance; but each was too small and we left the dead outside of every hole that was deserted. Now we are at the right place at last. There is only one rule for guidance. You know what it is. Those who do not accept it must lose a few cases that they did not really intend to lose, and they must let many trusting patients suffer tedious convalescence and inconvenient exacerbation at a time when they would prefer to be engaged in affairs. The troubled families will be satisfied when it is explained to them that these cases seem to be peculiar in their character.

I am prepared to admit that in many of the smaller towns it is not "policy" to remove an infected appendix at the very outset of appendicitis. At first I was shocked to hear physicians say that it was better to let a case of appendicitis run its course without operation, on the ground that the comments of rivals and of neighbors would ruin their practice if they attempted to do the right thing promptly. This expression of sentiment was so general, however, that I could not doubt its importance. O human nature, how polypragmatical art thou!

Even in the large cities there are still to be found most excellent authorities who are not yet ready to have the infected appendix removed as soon as it is discovered. This is because they are too busy to get out into the field and think at a mark, or because they have not had an opportunity to see the results of the inch-and-a-half incision and week-and-a-half confinement in appendicitis cases. They are men who are familiar with logic and who are accustomed to analysis and to rational deduction; but they work from the wrong set of data, and they give us a masterly impressionist picture of strawberries among autumn leaves.

The sweet-oil and opium jugglers detained us for a while. Did you see the Hindoo jugglers on the Midway? They put a man into a basket and then poked around in the basket with a stick, and explained to the audience that the man was not there. After a while the man came out of the basket again. The sweet-oil and opium jugglers tucked away an infected appendix and told us that infection was not there. After a while the infection stalked out again.

Every general practitioner in this audience has in his *climide* patients who are supposed to have recovered from appendicitis under medical treatment; and yet the answers that most of these patients would give to my questions would cause surprise. The bacterium *coli communis* and the pyogenic streptococci and staphylococci do not leave when we shoo them off

with poultices and opium and sweet-oil. They simply run and hide. I have removed a number of appendices in the presence of this class from patients who were believed by good authorities to be out of danger from relapses; and in all of the cases we have found destructive processes in progress. Sometimes the bacteria were slowly destroying the adenoid layer, which had swollen to the point of interference with its own vascular supply; sometimes proliferating eudarteritis was insidiously and surely laying the way for gangrene of the appendix; sometimes tuberculosis had become engrafted upon the weakened and diseased tissues; and in every case we found appendices which were malevolent in disposition.

Not long ago I quoted my statistics to an old practitioner who asked, with a sly twinkle in his eye, how many of the patients would have recovered without operation. "I do not know," said I, "but some of them would have died, and that settles it." Some of them would have spent more time in bed with every relapse than they did after the inch-and-a-half incision had been made; and that settles that question. I would rather remove infected appendices at a thousand dollars apiece from uncomplicated cases, and have all of the patients recover, than to add up small bills for visits to patients who died without operation, or who are left to go through the whole performance of another relapse of appendicitis after my so-called services have been rendered.

There are many cases of simple catarrhal appendicitis when we fail to look at the appendices; but when we look at them, they are infectious, exudative cases. If there is anything in a name, there is disaster in the name "catarrhal appendicitis."

They have charged me with being sensational. Let us see about that. Small-pox causes protracted suffering and death; but many patients recover from this disease, although the recovered ones are left with defects, as a rule. We know how to prevent deaths and defects from small-pox; and they are consequently unnecessary. Is there anything sensational about that statement? No! Now, please substitute the word "appendicitis" for the word "small-pox," and note the effect. It is the combination of fact and date that makes us listen *cum arrectis auribus*. Twenty years from now the facts about appendicitis will ring with a different timbre. Physicians who have not seen the pretty modern operation for prompt removal of the infected appendix are apt to draw in imagination a faulty view of the subject. They should interrupt the patient who is reading his morning newspaper in bed on the second day after the operation, and have a chat with him.

Now, look at the patient upon whom we are about to operate. He has an abdominal scar five inches long, and a ventral hernia. He has had one dangerous relapse of appendicitis since he was operated upon; and the insurance companies will not risk more than three or four postage stamps upon him. Four years ago he had an attack of appendicitis; and his physician in consultation with a surgeon waited for pus to form. Then the pus was evacuated, the appendix was left among adhesions, and the patient recovered. Recovered! Mockery! The surgeon who did the work bungled it by leaving it half done; and he is responsible for the ventral hernia and for the risk to life that resulted from leaving an infected appendix baited and set in the iliac fossa. I was the surgeon who gave

¹ A lecture at the New York Post-Graduate Medical School, December 30, 1898.

counsel and who did the work, at a time when there was excellent authority for doing it in that way. The family physician, like the other physicians upon whom I depend, would to-day be ashamed to call me to a case of appendicitis in which pus had formed.

This patient has given the usual history of slight exacerbation, of constipation and of little septic impressions since the time of his first acute attack. Three years ago he had a dangerous exacerbation, but was not where he could be operated upon.

The abdominal incision is now made; and I proceed to enucleate the appendix from a conglomerate mass of omentum, mesentery, colon, ileum, and adventitious tissue. The base of the appendix is ligated with fine eye silk, and the stump is buried with four Lembert sutures of catgut. On examination of the specimen, you observe that the muscular structure of the appendix is complete and hypertrophied. On inspection of the interior of the specimen, it is seen that the mucosa has disappeared and various tiny black or gray gangrenous spots are readily distinguished on the surface of the swollen and infiltrated adenoid layer.

We have had to learn three principal things in appendicitis within the past decade: (1) that appendicitis is very common, and that it simulates many kinds of abdominal disease; (2) that we must operate for removal of the appendix before pus has formed, if we would prevent deaths and hernia and uncomfortable complications; (3) that we do not need to make much of an incision, and that the operation is a neat and pretty one, instead of a thing to be dreaded in itself.

Original Articles.

NOTES ON PHOSPHATURIA.¹

BY PAUL THORNDIKE, M.D., BOSTON.

DURING the last three or four years the writer has had the care of a number of cases such as are often described and discussed in medical writings under the name of "phosphaturia." The perplexity which several of them caused him led to the collection of these notes from the meagre and unsatisfactory knowledge of the subject at our command; and it is the object of this paper merely to arrange these notes and present them to the Society in a way which it is hoped may prove of use.

Cases characterized by well-marked symptoms of digestive and nervous disturbance, perhaps also by neuralgic pains in the abdomen, back and loins, and associated with a more or less persistent phosphatic cloud in the urine, are the ones to which the writer refers. They are common enough to be familiar to us all, and are often severe enough to make serious inroads upon the patient's health. The patient comes to you complaining of a series of gastric symptoms: distress immediately after eating, heart-burn, eructations of gas, passage of flatus, constipation, and often of pretty severe colicky pain in the bowels. With these symptoms, more or less marked and pointing directly to fermentative changes going on in the stomach, are often associated extreme nervous irritability and sometimes indefinite but none the less annoying neuralgic pains in the back, loins and thighs. The urine is either

alkaline in reaction and turbid from the cloud of precipitated phosphates, or is neutral or slightly alkaline in reaction, clear in color, and becomes cloudy when even very slightly heated. If the trouble has persisted for any length of time, there is emaciation to a greater or less degree, and due of course to the ingestion of an insufficient quantity of food which is not properly taken care of after it reaches the stomach. Let us consider the urine of such a case for a moment, and the causes which may bring about such a state of affairs.

The phosphoric acid excreted in the urine is derived from the oxidation of the waste albuminoid tissues of the body, and also directly from the food. It is excreted by the kidneys at the rate of about three grammes daily, in combination with various bases, notably potassium, sodium, calcium and magnesium. Of these phosphates, those of potassium and sodium are very soluble and so are never deposited as precipitates in the urine; but the earthy phosphates (of calcium and magnesium) being soluble only in acid solutions, are often deposited from alkaline or neutral urines, and appear as a milky cloud in the urine. So it is at once apparent that this appearance of a phosphatic cloud in the urine has not of necessity anything whatever to do with the amount of phosphoric acid which is being excreted in the urine, and which can be estimated only by carefully quantitative analyses of the urine of a patient whose diet on successive days is carefully regulated; but it is merely an indication of a lack of acidity of the urine.

Now, when urine loses its acidity it does so (a) either from the formation of ammonia due to the decomposition of urea, that is to say, because the urine spoils after its secretion by the kidneys, and either somewhere in the genito-urinary tract (dependent upon some local lesion of the organs through which it passes or upon dirty instruments introduced into those organs) or in the air after it has been voided; (b) or it loses its acidity from the constant presence in it of too great a quantity of alkaline material which is not the result of any process of decomposition, but is a fixed alkali excreted in the urine chiefly in the form of carbonates of sodium and potassium. It is with these latter urines, those which are neutral or alkaline from the more or less constant presence of a fixed alkali, that we are concerned to-night. These persistently alkaline urines seem to be associated with a series of digestive and nervous symptoms which are of frequent occurrence and are of enough clinical importance to demand recognition as a distinct malady. It is as descriptive of this condition that the term phosphaturia is so often used. It would seem then that it is not the amount of phosphoric acid eliminated by the kidneys, but the diminished acidity of the urine and its associated symptoms, which are of interest in this class of cases. Many explanations for this lack of acidity have been offered us.

Bence Jones thought that when the contents of the stomach were most acid, for example, in certain disturbances of digestion, the urine was least so, the one counterbalancing the other. This explanation hardly suffices, as it is surely evident that in such conditions of the stomach, the excess of acid is not withdrawn from the tissues and so kept out of the urine, but is formed by the changes going on in the stomach.

Dr. Roberts thought the alkalinity was the result of the increased addition to the blood of alkaline bases from the food; but as the appetite in the condition is much more apt to be bad than good, and as there is no

¹ Read at the meeting of Boston Society for Medical Improvement, November 27, 1893.

evidence that food containing such alkaline bases is either eaten or absorbed in larger amounts than usual, this supposition does not seem of much value. What is true is that such urines contain a surplus of alkaline carbonates, as shown by analyses, and the alkalinity is most probably due to the constant and excessive elimination of these carbonates of potassium and sodium.

Ralfe says that this excessive elimination of carbonates may well be accounted for by three conditions:

(1) A general debility and its coincident feeble respiratory acts, leading to an accumulation of carbonic acid in the tissues. It is a noteworthy fact that in such conditions, for example, in patients convalescing from acute diseases, such urines are very frequently met with.

(2) A diminished secretion of bile, the frequent result of a duodenal catarrh produced by the irritation of the acid contents of the deranged stomach being poured into the duodenum. The bile being the chief secretion by which alkaline salts are excreted from the body, any diminution of its quantity gives rise to an accumulation of these carbonates in the blood, and therefore to a greater elimination of them by the kidneys.

(3) The acids formed by the fermentative changes which go on in the deranged stomach being of the fatty acid series, on entering the system are oxydized into carbonic acid and unite with the alkaline bases to form carbonates, which increase the alkalinity of the blood and of the urine.

That the excessive elimination of these carbonates and the consequent more or less persistent alkalinity of the urine may be explained entirely by such digestive troubles, is not probable, for there seem to be cases in which the phosphatic deposit is dependent solely upon nervous causes. In fact, cases of this sort are by no means uncommon. For example: Two or three years ago a middle-aged man living in Newfoundland, came to the writer complaining that for the last two years he had been suffering from frequent micturition and severe neuralgic pains in the abdomen and loins. He looked somewhat emaciated, and was nervous and depressed about himself and his personal affairs. There were no gastric symptoms, no venereal history, and a most careful examination revealed no lesion of the urethra or bladder. The urine was normal except for its lack of acidity and the almost constant presence of a phosphatic cloud. The man said that whenever he got into this nervous, worried condition, this same set of symptoms appeared. He was readily cured for the time being by a few hygienic suggestions, a tonic pill and some benzoate of soda. A second attack was brought on a year later by the excitement and worry he went through at the time of the great fire in St. Johns. The same treatment gave relief very quickly. This seems to be a purely nervous case, and such cases are common enough. The writer has seen several similar cases lasting often for months, in healthy but nervous men, after operations upon the penis and adjacent parts.

This deposit of phosphates has been studied by many eminent men, both clinicians and chemists, and has been found to occur in a great variety of diseases, for example, in acute brain diseases, acute mania, in pleuritis and pneumonias, in rheumatic fever towards the end of the attack, at certain periods of a typhoid fever, etc.; but the cases are rarely of much severity or duration, and practically take care of themselves, as

the general nervous and physical condition improves under proper care. That is to say, if the local cause be removed — be it digestive or nervous — the so-called phosphaturia disappears, as a rule; although sometimes it has existed long enough to leave behind it a mild degree of inflammation of the bladder or urethra, which may prove annoying enough to demand local or systemic treatment.

There are, however, many of these cases in which the condition persists for months or years; the urine gradually increases in amount and the patient's condition becomes really very serious, the general debility and nervous depression becoming extreme and the anæmia and emaciation marked. The general mental and physical condition of these patients seems sometimes quite beyond any help which the physician can offer, and the cases are most trying ones to care for. It is when we come to a study of this class of cases that we find the greatest confusion of belief in the minds of medical men. As the disease advances it often presents a clinical picture so similar to that commonly met with in cases usually described under the name "diabetes insipidus," that confusion both as to the terms descriptive of these conditions and of the conditions themselves is a most natural result.

"Cases characterized by increased thirst and excessive discharge of a watery urine of low specific gravity, free from sugar and albumen are grouped together under the general designation of 'diabetes insipidus'" (Roberts); and therefore these cases should properly be included under that definition. Other terms often used in describing similar cases, are polyuria, diuresis, polydipsia, hydruria. These terms are often carelessly used in medical writings, without much reference to the relationship which exists between the water and the solid constituents of the urines in question.

Some writers, however, — notably Willis (who was the pioneer in this direction), Tessier and Ralfe, — are much more careful in their use of terms, and have made many attempts at classifying cases characterized or accompanied by excessive excretion of urine, according to the relationship existing between the solid and fluid constituents. For example, Willis calls the cases of excessive amount of a watery urine deficient in solids — hydruria; those of excessive amount with the urea diminished, anasoturia; and again those of excessive amount with excess of urea, azoturia. Several other similar classifications have been made, and among them one by Dr. Tessier, of Lyons, who describes a series of cases resembling diabetes mellitus in the thirst, emaciation, increased amount of urine, neuralgic pains, etc., but the urine, instead of containing sugar, had the phosphates so largely increased in amount that the daily excretion was often as high as fifteen or twenty grammes, instead of in the neighborhood of three grammes, as it should be. To these cases Tessier gave the name "phosphatic diabetes." Ralfe reports other similar cases. So these writers make a distinct class of the cases which eliminate phosphoric acid in excess.

The excessive elimination of phosphoric acid is undoubtedly a factor in some cases of polyuria. That it is not present in all such cases is, I believe, definitely proven by many analyses. Then, before we can recognize a definite disease characterized by this phosphaturia, we must know in what cases of polyuria it occurs, and must try to know the explanation of its presence. We do not know these things. Our knowledge of the part which phosphorus plays in the

body, as well as our knowledge of its elimination in diseased conditions, is very small; although during the last twenty years good work has been done in this direction, both experimentally and clinically in Germany and England. Dr. Golding Bird associated some of his spinal cases, many of which were functional, with phosphaturia. Its presence has been noted in many cases of head-injury, in acute inflammations of the cerebral membranes, in acute attacks of mania, in anemia (and especially in its pernicious forms). It occurs in cases of diabetes mellitus; and sometimes the sugar will disappear from the urine in such cases, and be replaced by phosphoric acid. The explanation of this undoubted fact may perhaps be that the sugar in the tissues changes to lactic acid, which attacks bone tissue and dissolves out the earthy phosphates. This is Benecke's theory, I believe. Others have been suggested for an explanation of phosphaturia when sugar is not present in the urine; for example, an increased metamorphosis of nervous tissue, the irritation of some co-ordinating chemical centre, the influence of a disturbed condition of the nervous system upon the general bodily nutrition.

That these cases of polyuria accompanied by an excessive elimination of phosphoric acid have been carefully and accurately reported, is beyond question, and therefore their existence may be taken as proven; and they represent the only class of cases which is entitled to the name phosphaturia. But these cases are extremely rare, and when they do occur, present no well-marked clinical picture which will distinguish them from other similar cases of polyuria unaccompanied by an excess of phosphoric-acid elimination. Such a case, then, can only be recognized by careful quantitative analyses of the urine; and the term phosphaturia will have little interest for most of us in a clinical sense, as we may never encounter such a case in the practice of a life-time. All that we know of such cases is that they do rarely occur, that they are generally associated with grave physical disorder, and that they usually accompany nervous disturbances in which the blood and general nutrition of the patient are in bad condition.

Of the treatment of these stubborn cases there is but little to say. Annoying symptoms must be treated as they arise, and every effort made to better the general condition of the patient by careful hygienic and dietetic suggestions and suitable tonics. Alcohol always increases the flow of urine, and should be avoided. The administration of phosphorus or its compounds seems of little avail as far as experience has taught us, for as Ralfe says, "There appears to be no lack of these constituents in the system; the difficulty seems rather to lie in the want of power of the tissues to retain them."

To recapitulate the points which these notes attempt to emphasize; we have considered two conditions, both of which are commonly discussed under the name phosphaturia:

(1) The less important class of cases of digestive or nervous origin, in which the phosphatic cloud in the urine is merely an indication of a lack of acidity in the urine, which in its turn is usually traceable to some derangement of the stomach and duodenum or to some temporary nervous cause. These cases have no right to the name phosphaturia, are usually of comparatively short duration, and are cured by the treatment of the local cause and the consequent improvement of the general condition of the patient, which may closely

simulate the condition we commonly speak of as diabetes insipidus, and which should probably be classed as cases of this disease. The fact that some cases are associated with an increased elimination of phosphoric-acid in the urine does not at present furnish sufficient evidence to justify our making a definite clinical condition of it and calling it phosphaturia, phosphatic diabetes or anything else. The term phosphaturia, then, although perfectly proper in a chemical sense, as descriptive of a urine which habitually contains too much phosphoric acid, has in the writer's belief no clinical significance in so far as there is no well-marked set of symptoms constantly occurring as an accompaniment of this sort of urine.

(2) The rare cases of severe type and long duration which closely simulate the condition we commonly speak of as diabetes insipidus, and to which Tessier gave the name phosphatic diabetes, probably because the condition occurs occasionally in a case of true sugar diabetes. These cases are so very uncommon, and present such variable groups of symptoms when they do occur, that it seems scarcely worth while to give the name phosphaturia to any definite clinical condition, although, used as descriptive of these rare cases when the urine habitually contains too much phosphoric acid, the term phosphaturia is a perfectly proper one.

Before closing, a few words relative to phosphatic calculi seem appropriate. In many of the long-continued cases, the alkaline urine is often accompanied by a more or less persistent deposit of earthy phosphates for a period covering many months. This deposit may be very considerable in amount; and such patients usually bring to you samples of it which they have collected from the urinary sediment. Yet primary phosphatic concretions are by no means common; and such cases often recover completely, with no further bad result than a vesical irritability which the presence of the phosphatic deposit in the urine has created. This may perhaps be accounted for by the fact that the deposit is usually a fine, powdery precipitate, non-crystalline in structure, and with very little tendency to form masses or concretions of any size. Certain it is, that most phosphatic calculi, the so-called fusible calculi, are of secondary formation, made up of mixed phosphates.

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NATIONAL REGISTRATION A NECESSITY.¹

BY SAMUEL W. ABBOTT, M.D., BOSTON.

In the present paper it is my design to state briefly some of the reasons for the adoption of a system of registration of vital statistics in each one of the United States—such a system as now exists in nearly every enlightened nation, the United States as a whole forming a marked exception.

Dr. Curtis, in a very intelligent discussion of the general subject of vital statistics, says: "A full and accurate knowledge of the people in every community is an indispensable requisite for the successful administration of public affairs. Such knowledge is obtained by the public authorities, from two distinct sources. In the first place, the enumeration of the people, by which the population, the numbers, the ages, the abodes, the professions, etc., of the individuals composing it are ascertained, is effected by the taking of a census. In the second place, 'the movement of the population,' under which term are comprehended the births, marriages and deaths occurring yearly, is determined by registration."²

Dr. Ogle states the objects of registration as follows: " (1) There are all the legal uses, where proof of death is required, such as the succession of property, payment of insurance monies after death, etc.; (2) there is the prevention of, or interference with murder, or foul play generally; (3) the provision of trustworthy data for the elaboration of statistics concerning health, disease and mortality."

The purposes of registration are manifold, and their importance emphasizes the necessity of having this department of statistical work conducted in the most thorough and intelligent manner.

It serves in the first place to facilitate the identification of individuals for the transmission of property and for the protection of life against crime.

Second, it affords data for the determination of life contingencies, which form the basis of life insurance. Sufficient importance has never been given to this use of the statistics of mortality in this country. The figures upon which this very great and important business (amounting to many millions in each year and affording protection reckoned even by billions) is founded, can only be obtained in this country from a very small portion of the people, having registration extending over a long period of years.

But, third, and most important of all, it furnishes to sanitary science, and to the medical profession in general, most valuable information regarding the public health.

With these facts in view it is a sad comment upon the civilization of a great nation, that sixty-five millions of people are to-day entirely without any general system of registration of vital statistics; that the birth-rate, the death-rate and the marriage-rate of this country as a whole, are absolutely unknown.

There is no information to be had, for example, as to the birth-rate or the death-rate of this great State of Illinois, within whose limits we are assembled, the third State of the Union in its population of more than four millions. We have absolutely no means of comparing the death-rate of Chicago with that of the

rural population of the remainder of the State; since, while the former is known with some degree of certainty, the latter is unknown. There is no means of comparing the death-rates of any of the counties of the State (or of larger districts) with each other.

Of the foreign countries, most of the largest and enlightened nations of Europe have had registration of a more or less complete character for periods varying from a quarter to a half century or more. It is a matter of great importance in the study of nations that their conditions and circumstances may be compared with each other. But in this very important direction we, as a nation, have no possible means for making such a comparison. When individual States are considered, we find a little improvement. States embracing about twelve per cent. of the population of the whole country have fairly complete systems of registration; while other States, having about as many more inhabitants, have enacted adequate laws, but thus far the execution of these laws is not fully carried out.

What then is needed to introduce and perfect a thorough system of registration throughout the whole country from Maine to Oregon, and from the Gulf to the Great Lakes?

(1) The enactment of laws in every State providing for the registration of births, marriages and deaths. The more uniform such laws can be made with reference to the information to be obtained in individual certificates, the better.

(2) The cordial co-operation of the general government in providing a central authority for the collection and publication of the statistical material of the individual States. Possibly grants might be made to the younger States to facilitate the introduction of this very important work.

(3) The necessity of awakening the interest of the medical profession in this work and the need of their hearty co-operation in aiding it in every possible manner is apparent. To this end the raising of the standard of medical education will have a favorable effect. The teaching of vital statistics, as an essential part of medical and especially of sanitary education, should be urged.

(4) The placing of the work of registration in the hands of trained medical men, who should act as registrars. These should not only be medical men, but also men who are experts in the subject of vital statistics at least. This principle is recognized by all the foremost authorities in public hygiene. No one doubts for a moment the wisdom of the British government in entrusting the registration of England to such men as Dr. Farr and Dr. Ogle. And the same may also be said of the French and German governments. Due authority should be given to the registrars of States and of municipalities to examine the returns of death, carefully, and to institute inquiries in all doubtful cases, especially when the certificates are signed by unqualified practitioners.

(5) In addition to the foregoing considerations, a revision of the nomenclature and classification of diseases is demanded, which shall be in harmony with the progress of medical science. Such revision, whenever it shall be made, should be uniform throughout all countries having registration, in order to facilitate the international comparison of the results obtained by registration.⁴

While the accurate registration of all deaths em-

¹ A paper read at the World's Congress of Hygiene, at Chicago, October 12, 1893.

² Buck's Hygiene, vol. ii, p. 302.

³ Evidence before the Parliamentary Committee on Death Certification, June 3, 1892.

⁴ See Transactions of the Massachusetts Medical Society, 1892.

braced under the five general divisions or classes of disease is desirable, there is one class which has a peculiar interest to the sanitarian, and that is the group of infectious diseases, or those to which for a half-century the name "zymotic" has been applied. The diseases of this class, or at least a majority of them, are undoubtedly amenable to those preventive measures which constitute a large share of the work of sanitary authorities. Hence all such authorities must necessarily recognize the great importance of having a definite knowledge as to the mortality from infectious diseases from month to month, and from year to year. Such knowledge can only be had under a careful system of registration thoroughly carried out. To this class of diseases belong typhoid fever and phthisis,² diseases which destroy life during its most productive period, and hence involve a great economic loss to the population. The steady decline in the mortality from these diseases in cities and towns having such municipal sanitation as is required, is too well recognized to require lengthy comment here. But without a good system of registration the question of improvement or of retrogression could not be known with any degree of certainty.

Legislatures are slow to act when definite, tangible evidence or statements as to the actual results accomplished by sanitation are not to be had. Hence the importance of establishing such thorough and complete systems of registration as shall furnish the desired information.

The relation of the vital statistics of any community to the public-health administration of that community is very much like the relation which the counting-house of any commercial firm bears to its business. The business may be great or small; it may conduct commercial transactions over a very large extent of territory; it may own property, factories or mills in different manufacturing towns; it may employ large or small numbers of workmen; but, if it is desirable to obtain any definite information as to the extent or character of its operations, their success or failure, one must go to the counting-house or the business-office, where he can obtain full and accurate knowledge of the standing of the firm, of the amount of its business, and of its plans and methods. The assets and liabilities of the firm are here matters of record; and its journal and ledger, its daily, weekly, monthly and yearly balance-sheets tell us of the actual condition of its business.

Applying this illustration to the operations of a sanitary authority, the vital statistics of any community tell us its actual progress or retrogression in the excess of births over deaths, or, *vice versa*, of deaths over births. The changes, too, in the death-rates from preventable diseases both individually and collectively are instructive, as showing to a certain extent the results of thorough and efficient sanitary work. They constitute the sanitary barometer by which not only present conditions are known, but also with some degree of certainty, future conditions may be foretold.

Let the following facts serve as an illustration:

Upon a comparatively large river in my own State are some half-dozen manufacturing cities and towns. Let these cities and towns be represented as follows: A, the cities and small towns upon the upper portion of the stream (embracing 300,000 inhabitants); B and

C, two larger cities upon the lower portion of the same stream; D, a smaller city near its mouth. The entire population upon the water-shed of this river is about a half-million inhabitants.

The State Board of Health collects information weekly from the cities and towns within the limits of the State, as to the mortality from infectious diseases, including the cities and towns upon this river. It is also authorized by law to examine all the water-supplies of the State, a work in which it is continually engaged. The statutes forbid that streams used as water-supplies shall be used for the discharge of sewage; but the river in question is exempted by law from the operation of this statute, and sewage goes into it without hindrance from A, B, C and D. Now B and C take the water of this river directly and without filtration for domestic use. Sewage from A enters the water-supply of B; sewage from A and B enters the water-supply of C. As might be expected under this condition of affairs, typhoid fever has become more than epidemic at B and C, the mortality from this cause bearing the following ratios for the twenty years (1871 to 1890): The typhoid death-rate of the State being taken as 100, that of B was 155, and that of C was 170, while in the last five years of this period the excess rate was still greater. Any slight prevalence of typhoid fever in the sewered portions of cities and towns included in A was pretty sure to be followed by a greatly increased prevalence in B and C.

Up to the fall of 1892 the water-supply of the small city D was not taken from the river, but from a spring upon its shore. During the dry season of 1892 this spring became inadequate, and the water-supply which was furnished by a private company was increased by extending a water pipe to the river and supplementing the supply directly from that source. In the frequent routine examinations of the water-supplies conducted by the State Board of Health, this fact became known to the board, in consequence of the immediate change in the quality of the water as shown by its analysis. Under these circumstances the board immediately warned the water company of the danger of using water from a constantly polluted stream into which the sewage of a population of several hundred thousand was discharged. The company took no notice of this communication, but continued pumping water from the river and distributing it to the inhabitants. What was the result? In less than two months an epidemic of typhoid fever attacked the population using this water, more severe in character than had been known in that city for a half-century. It so happened that this event occurred during or at the beginning of the session of the State legislature. The citizens were soon aroused to a sense of the danger of the situation. The mayor appealed to the legislature for such aid as proper legislation might afford; and while the franchises of water companies have usually been guarded with jealous care, in this instance the flagrant disregard of the admonition which had been given them and the consequent sickness and death of many citizens, which might have been avoided, had they not neglected the advice of an experienced authority which had thoroughly examined the whole situation, induced the legislature to give to the city the right to introduce an independent supply, and at the time of this writing (October, 1893) the city has, by an overwhelming majority, voted to take this action.

I have presented this illustration, not so much for

² By almost universal consent, phthisis should be included in the category of infectious diseases.

the purpose of showing what might have been done in preventing sickness and loss of human life under circumstances of careful observation, followed by advice to a responsible corporation and an obedient following of such advice, but for the purpose of showing the usefulness of a careful system of vital statistics, embracing a weekly return from the cities and towns along the banks of this river, of the deaths and causes of death, by which a warning reaches the State Board of Health and may be by it transmitted to the local boards, of the existence of unusual prevalence of epidemic disease.

About a quarter of a century ago the death-rate of England was constantly higher than it is at the present day. It was noticed that this high death-rate was mainly in the large towns and cities. Sanitary works were introduced in these cities, embracing new water-supplies, systems of sewerage and disposal of refuse, etc., and very soon the death-rate was diminished in nearly every city in which such improvements had been introduced.*

Now the point which I desire to enforce, is not so much the fact of such improvement as a natural consequence of thorough sanitation, but the method by which this fact was ascertained. The foundation or basis upon which the general public movement for these improvements rested, and which justified their introduction, was the death-rate of the cities in question. The computation of this death-rate and the comparison of the mortality before and after the introduction of public sanitary improvements was made possible only by the existence throughout the whole country of a complete and accurate system of registration.

Again the possibility of conducting such valuable and instructive investigations as are presented in Dr. Longstaff's "Studies in Statistics," and in the older papers of Buchan and Mitchell, is only made certain by the existence of a system of registration.

In this connection I desire to call your attention to one class of causes of death which is more or less preventable, although not in the same sense and degree as the group of infectious diseases; I mean the class of deaths by violence. All measures which tend to ameliorate the condition of man, to lessen suffering, poverty and intemperance, to protect life and to make it more secure from danger, will thereby diminish the annual mortality from homicide, suicide and accident. In the State of Massachusetts, by a statute of 1885 the registration of this class of deaths was made much more thorough and complete than it had previously been. At a still earlier date (1877) the coroner system had been abolished as a useless relic of antiquity, and an entirely new method of inquiry was introduced, which was modelled after the better modes in operation in continental Europe.

The new plan of procedure provides for the separation of the medical from the legal duties connected with the investigation of deaths by violence, the former being entrusted to a corps of well-trained medical examiners, while the latter are performed by the district judges. The operation of this system for a period of fifteen years has been entirely satisfactory. It is at once more economical and far more efficient than the coroner system which it superseded, and no one at the present day desires to return to the old method.

I would therefore commend this mode of investigation, together with the improved system of registration

which now constitutes a part of the general plan, as suited to the wants of any community comprising either a large or a small population.

To conclude, a thorough system of registration is not only a valuable auxiliary, but is a natural and essential department of the work of any general sanitary authority; and in every State where no provision is made for the collection, tabulation, and publication of the vital statistics of the population, measures should be taken with the least possible delay for the carrying out of this important public duty.

Clinical Department.

TWO CASES OF HYDRAMNION ASSOCIATED WITH ABDOMINAL DISTENTION IN THE FÆTUS.¹

BY CHARLES W. TOWNSEND, M.D.

CASES of true hydramnion, where the distention is so great as to cause morbid symptoms and the premature expulsion of the fœtus, are comparatively rare. The causes of hydramnion are many; but one of the most common is stated to be a morbid condition of the fœtus resulting in mechanical disturbances of the placental or umbilical circulation. Barton Cooke-Hirst, in "The American System of Obstetrics," says: "That increased internal pressure within the umbilical vein will give rise to a transudation through the amnion, has been abundantly proved by Sallinger. . . . It may be generally stated, therefore, that any condition of the fœtus that will raise the blood-pressure in the umbilical vein, thus increasing the blood-pressure in the placenta, may give rise to hydramnion." The two cases of hydramnion I am about to relate appear to belong to this class. Hirst instances, among other morbid changes in the fœtus, cirrhotic livers, and tumors which obstruct the umbilical circulation.

The maternal histories in my cases are very much alike. Both were patients of the Lying-in Hospital; both were uncomfortably distended at the seventh and eighth month, so as to be as large or larger than at full term; and both gave birth prematurely (one at seven and one-half months, the other at eight months). A description of the labor of one of these cases will do for both.

Mrs. S., a primipara in the out-patient department, seven and one-half months pregnant, was seen November 20, 1887. The abdomen was very large, and tense as a drum. On external palpation no fœtal parts could be felt. The fœtal heart was heard faintly. By vaginal examination the fœtal head was felt above the brim, and ballottement could very easily be obtained. When the membranes were ruptured a large quantity of water came away, and the rush of water was so great after the birth of the child, which speedily followed, that it flooded the bed down to the foot, pouring over the edge and flowing along the floor. The labor previous to this had been a tedious one, lasting thirty-two hours. The child lived only forty-five minutes.

In the second case the mother was a multipara. Here the child lived nearly an hour. Both the infants were females, the sex which largely preponderates in cases of hydramnion. The mothers in both cases made good recoveries. In both babies the abdomen was much distended, causing in the second case a delay

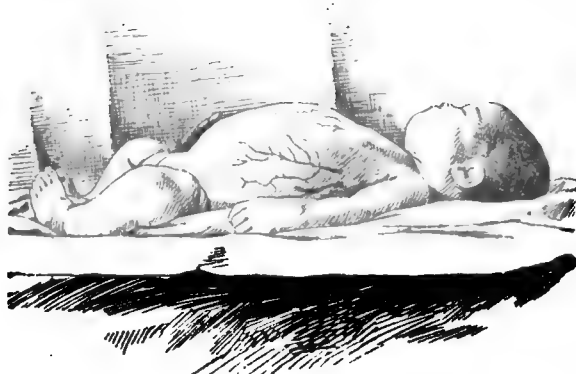
* Ninth Report of the Privy Council, England.

¹ Read before the Obstetrical Society of Boston, November 11, 1888.

in the extraction of the body. I obtained an autopsy in each case.

CASE I. Autopsy of seven and one-half months' female foetus, weight three pounds. Circumference of head, eleven inches; of chest, nine and one-quarter inches; of abdomen, eleven inches. Abdomen much distended, the skin tense and shining. Abdominal cavity contained a drachm of clear serum. Liver much enlarged, extending below the level of the umbilicus on the right side and as far as the umbilicus in the median line; much distended with blood. Other organs normal.

CASE II. Autopsy of eight months' female foetus, weight nine and one-half pounds. Circumference of head, thirteen and one-quarter inches; of chest, fourteen inches; of abdomen, seventeen and one-half inches. The abdomen was very much distended with fluid—a fact which accounted for the weight of the child—its superficial veins being prominent, as may be seen by the accompanying photograph. On open-



ing the abdomen considerable clear fluid flowed out, and there were found to be numerous adhesions among the abdominal viscera. The liver and spleen were normal. The fluid was not, however, the cause of all the distention, for a large sac was found full of fluid extending up out of the pelvis as high as the umbilicus. On closer examination this proved to be the vagina, much distended with urine, the uterus being borne on the summit of this large sac. I was unable to discover with a fine probe any external meatus or opening to the vagina, and it seemed probable that the bladder emptied into an occluded vagina. The bladder itself was slightly enlarged, but being more muscular than the vagina was able to resist the pressure of urine, while the vagina gave way. Dr. Whitney, to whom I showed the specimen, suggested this explanation.

The association of abnormal foetal abdomens in these two cases of hydramnion would seem to be more than accidental. It is probable in each case that there was increased pressure in the umbilical vein with the resulting hydramnion.

A CASE OF PUERPERAL SEPTICÆMIA.¹

BY GEORGE HAVEN, M.D.

THE following case of puerperal septicæmia is, I think, sufficiently interesting from a bacteriological standpoint to justify the time which I shall occupy in reporting it to this Society.

The patient was delivered at the Boston Lying-in Hospital. Dr. J. L. Morse has made cultures from

¹ Read before the Obstetrical Society of Boston, November 11, 1893.

the patches which were found in the vagina and on the cervix, and will speak of the result of his research after I have reported the case.

R. W., dissipated history, entered the hospital August 29, 1893, in labor, membranes ruptured. She had been examined before entrance by some unknown person. She was delivered after a very long second stage by high forceps and axis traction. Twelve hours after delivery she had a chill, and the temperature went up to 104°.

August 31st. Lochia was very foul. Dr. C. W. Townsend, in whose service the case was delivered, found the vagina covered with whitish-yellow deposits, which could not be scraped off. The uterus was washed out with corrosive and carbolic. The pulse was weak and rapid; pain and tenderness were present over the uterine area. Epsom salts were given until she had free movements. She also had brandy and egg-nogs.

I examined her on September 1st, when my turn of service began at the hospital. Condition about the same as at last examination. Dr. Morse removed sufficient of the membrane to make cultures. The uterus was washed out with corrosive and peroxide of hydrogen. An iodoform pencil was introduced into the cavity of the organ, and iodoform powder dusted into the vagina. She had at this time a diarrhoea, probably septic. Nourishment was pressed as much as possible. She was given champagne in place of brandy, as the former nauseated her.

September 2d, she was feeling slightly better. Her condition remained about the same up to the 9th of September, when she complained of pain over the uterus. A flaxseed poultice gave her some relief. There was a slight trace of albumen in the urine, also a few hyaline casts.

September 25th, she was much better.

September 27th, she had a very severe headache, which did not yield to treatment, and made me think there was a distinct renal element in the case. She was given digitalis and acetate of potash. The urine contained a large trace of albumin, as well as many granular and hyaline casts.

On September 28th she had a convulsion, and was comatose after it. She was given croton oil and a hot-air bath. A movement occurred about midnight, but the skin remained perfectly dry; and she died at 5.40 A. M., September 29th.

This was a case where, if the kidneys had remained normal, recovery would have been possible. As it was, she died of uræmia. The kidney lesion may possibly have been secondary to the septicæmia, but was probably present when she entered the hospital. The rapid and violent development of her septicæmia (twelve hours) makes it almost certain that she was septic when admitted.

BACTERIOLOGICAL CULTURES FROM A CASE OF PUERPERAL SEPTICÆMIA.¹

BY J. L. MORSE, M.D.

BEFORE the employment of cultural methods for isolating micro-organisms, various observers found chains of micrococci in the tissues of women dead of puerperal fever. Mayrhofer, in 1865, was the first to publish such an observation, and was rapidly followed by

¹ Read before the Obstetrical Society of Boston, November 11, 1893.

others, among whom may be mentioned Rindfleisch, Recklinghausen, Klebs, Orth and Doléris.

Pasteur, in 1880, was the first to cultivate the streptococcus from the organs of women dead of puerperal fever. Similar results were obtained by Fränkel, Bumm, Winter and many others, so that at present there can be no doubt that the streptococcus pyogenes stands in a causal relation to a very large proportion of the fatal cases of puerperal disease. Widal found streptococci in nearly every case in which he performed an autopsy, and also demonstrated that the most divergent forms of puerperal affection, for example, endometritis, peritonitis, pyæmia and even phlegmasia alba dolens, could be traced to streptococcus infection.

Streptococci are not the sole cause, however, for organisms that lead to wound-infection elsewhere can also give rise to puerperal wound-infection. Brieger was the first to show that the staphylococcus could cause fatal puerperal fever, and his statements were soon verified. They, however, rarely cause the more severe forms, but are often combined with streptococci.

Krönig¹ has recently demonstrated that gonococci may occasionally be the cause of some of the milder cases of puerperal disease.

Von Franque,² in a recent article, reports a case of moderate severity, in which he found a pure culture of the colon bacillus in the uterus, unaccompanied by any other organism. A pure culture from this case readily killed guinea-pigs and rabbits. As far as I know, this is the first and only reported case of puerperal infection due to this bacillus. It is not to be surprised at, however, when we consider the proximity of the rectum and the frequency with which the colon bacillus is found in purulent affections of the abdomen, especially appendicitis.

It is probable that other organisms may cause the trouble, either alone or in combination, notably the bacillus proteus.

In the case in question a sterile swab was introduced into the interior of the uterus and another into the upper vagina under aseptic precautions. Cultures of both were made on Löffler's blood-serum mixture, and showed a pure growth of a short bacillus. Agar plates were made from each of these tubes, and showed a pure culture of colonies resembling in their growth the colon bacillus. This bacillus, when cultivated on the various media, corresponded in every way to the bacillus coli communis, that is, grew on nutrient gelatine without liquefaction and with the formation of a few gas-bubbles; formed gas in sugar agar, acidified and coagulated litmus milk; showed a profuse, moist, yellowish growth on potato; was motile in hanging drop of bouillon culture; and gave the indol reaction in Dunham's solution.

A NOTE ON THE USE OF ICHTHYOL.¹

BY A. D. SINCLAIR, M.D.

I WISH to say a few words about the drug ichthyol, which has come to rather extensive use of late, especially in Germany, but not used as yet to any great extent in this country. Some observations, however, published from time to time in the journals, have

given a favorable impression of its value in the treatment of various conditions of the system, local and constitutional.

Ichthyol is an exudation from strata of rocks in the Jura, which abound in fossil fishes. It is of a tarry consistency. Less than a dozen years ago this substance was brought to the notice of chemists in Hamburg, I think, who analyzed it. At all events, Professor Unna, the famous dermatologist of that city, was the first who brought it to the knowledge of the medical profession by the report of cases of certain cutaneous affections successfully treated by its use. This exposition led to further elaboration of the substance by the chemists, Cordes, Hermanin & Co., of Hamburg, who have made a variety of combinations of the original product with ammonium, sodium and zincum, each of which is supposed to possess — and some to my certain knowledge have — distinct influence therapeutically. Pills and capsules of the same are also made by them, and are beautiful specimens of pharmaceutical art. The liquid preparations of ichthyol exhale a strong sulphide-of-ammonium odor, which, however, soon passes off on exposure, and need not be, as some have written, prejudicial to its use as a drug to be used in one's consulting-room.

I shall now give in a few words my own experience of the use of ichthyol since I first had it brought to my notice in March, 1891, and will anticipate by stating that its most characteristic effects, when applied locally in certain affections of the pelvic viscera, are *anodyne and astringent*.

I have had many opportunities to test the value of ichthyol in congested states of the pelvic organs of women with various dilutions of the above-named preparations, but have arrived at a point where I think I find the best result from a fifty-per-cent. with glycerine. This strength of the drug has been used by me in numerous cases of recent and chronic congestions of the reproductive organs, as well as those of the vagina, urethra and rectum.

In prescribing ichthyol, the druggist will always dispense the sulpho-ichthyolate of ammonium, as this is the most known preparation. The combination with sodium I have not tested, but that with zinc is remarkably astringent, and its effects in certain conditions, to be arrived at by experience in the use of this medication, are a little surprising. I have not had a single bad effect in the use of preparations of ichthyol, although I have applied them many hundreds of times. I therefore, from my experience of their effects in certain conditions in the practice of minor gynecology, would recommend a trial to those who have never used them, and a more extended application by those who have already tried them.

I have in these short remarks confined myself to the use of ichthyol in congestive and chronic inflammatory states of the pelvic organs, but could say something favorable of it in the treatment of dyspepsia, chronic diarrhoea and erysipelas.

THE EFFECTS OF MEDICAL LEGISLATION. — At the last meeting of the State Board of Medical Examiners of the State of Washington, held in Seattle, there were twenty-two applicants for a license to practise, of whom twelve failed to pass the required examination and were rejected. The Board now requires a general average of 75 per cent. on all branches. — *Medical News*.

¹ Read before the Obstetrical Society of Boston, November 11, 1893.

² Krönig: *Centralbl. f. Gyn.*, 1893, 187.

³ Von Franque: *Zeit. f. Geb. u. Gyn.*, 1893, xxv, 377.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR Meeting, November 11, 1893, the President, DR. CHARLES M. GREEN, in the chair.
DR. GEORGE HAVEN reported

A CASE OF PUERPERAL SEPTICÆMIA.¹

DR. J. L. MORSE showed
BACTERIOLOGICAL CULTURES FROM THE ABOVE CASE.²

DR. EDWARD REYNOLDS said that he saw the case reported by Dr. Haven on the fifth day, for the first time, and was impressed with the fact that it was different from most cases of puerperal septicæmia.

DR. J. G. BLAKE thought that the great rapidity in the spread of the pseudo-membrane was very interesting.

DR. C. W. TOWNSEND said that he was astonished, on first examining the case, about twenty-four hours after labor, to find the whole vagina from the cervix to the vulva covered with an extensive pseudo-membrane. He had no doubt but that the patient, who had been leading a dissipated life, and who was unable to give a clear account of herself, had been in some way infected before entrance to the hospital.

DR. G. HAVEN said that the patient had recovered from the septicæmia, but died of renal disease. Whether this was induced by the sepsis he was unable to say.

DR. C. M. GREEN said that a number of septic cases at the Boston City Hospital have nephritis, although this lesion is also sometimes entirely absent.

DR. J. L. MORSE suggested that this nephritis, in septicæmia, was similar to the nephritis in scarlet fever. The only other case of puerperal septicæmia in which the colon bacillus was present, recovered.

DR. C. W. TOWNSEND reported

TWO CASES OF HYDRAMNION ASSOCIATED WITH ABDOMINAL DISTENTION IN THE FŒTUS.³

DR. J. G. BLAKE mentioned a case of enormous distention coming on suddenly. Notwithstanding this, the patient went on to full term, and gave birth (together with a great flood of water) to a living child.

DR. A. D. SINCLAIR had had a case of extreme hydramnion where the child was anencephalic, and he asked whether, in these cases, hydramnion was apt to occur.

DR. E. J. FORSTER had had but one case of anencephalus without hydramnion.

DR. EDWARD REYNOLDS had seen two cases without hydramnion.

DR. C. M. GREEN had seen one case without it, and he did not think there was any necessary connection between the two. Anything that interfered with the umbilical circulation, whether by disease of the liver or abdominal tumors of the fœtus, as in Dr. Townsend's cases, or by twisting or knotting of the cord, might cause hydramnion. The cause is sometimes to be found in disease of the placenta or decidual tissues. Oftentimes, however, it is difficult or impossible to find

a cause. These points he had brought out in a paper on hydramnion read to the Society some ten years ago.

DR. TOWNSEND, in closing, said that it was difficult to draw an exact line between hydramnion and an amount of liquor increased within normal limit. Cases of true hydramnion, however, rarely went to full term on account of the extreme distention, and often gave rise to morbid symptoms. In both of his cases the association of abdominal distention in the fœtus, which might result in interference in the placental circulation, suggested strongly the origin of the hydramnion.

DR. A. D. SINCLAIR read

A NOTE ON THE USE OF ICHTHYOL.⁴

DR. J. G. BLAKE had recently used ichthyol, and considered it a valuable drug. In the vaginal pruritis of pregnancy he had used it with great relief, combined with lanolin; and he found it much better than strong solutions of cocaine. In the case he mentioned the mucous membrane of the vagina was very raw and painful. Carbolic acid, previously used in this case, had failed. One objection to ichthyol is its odor.

DR. SINCLAIR spoke of its use in the pruritis of diabetes. The form usually dispensed is the sulpho-ichthiolate of ammonium, and it is generally diluted fifty per cent. with glycerine. The zinc compound is much more astringent.

A RARE FORM OF THE HYMEN.

DR. F. W. DRAPER reported an instance of abnormally-formed hymen which had recently come under his observation. The subject of the anomaly was an unmarried woman, twenty-five years old. The hymen presented the following characteristics: From the middle point of the free edge of a moderately thick, crescentic, membranous curtain at the posterior segment of the ostium vaginae there projected forward and upwards a thin band or bridge about one-sixteenth of an inch in diameter, composed of tissue that was quite elastic and not tense, and having its anterior insertion just below the meatus urinarius. This band divided the vaginal outlet into two symmetrical orifices, oval in shape, each of a size to admit the tip of the index finger. The vaginal canal, above this unusual curtain at its entrance, was entirely normal.

Dr. Draper remarked that the possessor of this peculiar arrangement of the hymen could offer it as very strong presumptive evidence of her chastity and virginity.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, November 13, 1893, the President, DR. C. F. FOLSOM, in the chair.

REMOVAL OF FOREIGN BODY FROM THE ANTERIOR CHAMBER OF THE EYE.

DR. G. HAY: I wish to speak briefly of a case of foreign body in the anterior chamber of the eye, which I removed recently with a magnet. The foreign body did not project from the cornea. It had passed into the anterior chamber, but the anterior extremity was lodged in the cornea, and just appeared on a level with the outer surface of the cornea: possibly it pro-

¹ See page 140 of the Journal.

² See page 140 of the Journal.

³ See page 139 of the Journal.

⁴ See page 141 of the Journal.

ided slightly, but not enough to grasp it with forceps. The foreign body was a very narrow piece of iron, the end of a needle, about one-tenth of an inch long. The inner end touched the iris, and it had been in the eye about two weeks when the man came to me. The history was that, while he was hammering, something struck the eye. Some one in the room remarked that there was blood in the eye. I suppose that the iris must have been wounded. When I saw him the blood had disappeared, and you saw this foreign body, the end of which was on a level with the outer surface of the cornea. I knew that an attempt to remove it by the point of the narrow knife would be dangerous, since one is liable to push the foreign body in, and might be obliged to do iridectomy, and might even then not be able to get the foreign body. While I was thinking how to remove it the man said: "Don't they sometimes use a magnet?" I had a magnet, which I prepared and carefully applied. At first it produced not the slightest result. The cornea was so tightly around the iron that it produced no effect. After two or three attempts, it occurred to me to cut with a very sharp-pointed knife where the bit of iron showed itself, in order to loosen it. I cut as carefully as I could on two opposite sides of the iron, and in so doing I noticed that the anterior chamber began to leak. This is what would be expected if I had attempted to pry it out; I should have opened the anterior chamber. It occurred to me that there would now be a better chance of pulling it out. I applied the magnet again, and it came out very readily.

The case did perfectly well. It is not a new case at all, and is only interesting on account of the way in which the piece of iron came out, and as an instance of a comparatively new method of treating an accident which formerly might have resulted disastrously.

DR. M. H. RICHARDSON showed a

LARGE DIFFUSE FIBROMA OF THE BREAST, WITH SPOT OF MEDULLARY CARCINOMA.

This specimen is interesting from the fact that it shows a cancerous degeneration in a large fibroma of the breast. I have frequently advised patients with a simple fibroma of the breast not to have any operation performed; that the tumor is not dangerous; that it simply interferes with the comfort of the patient from its size. I have never before seen a benign tumor of the breast which has taken on malignancy. In several cases of intracanalicular fibromata there have been suspicious spots found somewhere in the disease. This is the first case of its kind where there has been a marked malignancy both in gross appearances and history, and in the microscopic examination.

The patient, a woman of thirty-four, single, is a stitcher in a shoe-shop. In her work the shoe is brought constantly against the upper part of the breast. Her attention was called to the breast for the first time last June. She felt a hardness there. There was no family tendency to cancer. She has always been well and strong. I found a large tumor occupying the whole left breast. In the lower and anterior quadrant the skin was distinctly infiltrated. The axilla contained several large glands. There was no evidence of internal metastasis. It was impossible to remove the breast without sacrificing all the skin over it. I took, in addition to the skin over the breast, a circular margin of about an inch in all directions. This method

left an enormous wound to be filled by granulations. Without cutting away the breast, I carried the dissection along the edge of the pectoralis major and the anterior axillary border until the last of the glands had been dissected out. The breast and axilla, therefore, came away in one continuous mass. The operation was performed on Saturday—the day before yesterday—and thus far the patient is making very good progress.

It is always desirable in these operations to take a broad margin of skin. Recurrences in the scar always seem to me an evidence that not enough has been taken. The error in removing breasts generally consists in trying to shave the tumor too closely in order to get a first intention. The most important thing is to get the disease out, then we should, for the first time, think how we are going to close the wound.

EXCISION OF THE ELBOW-JOINT.

Dr. Richardson also described a case of chronic rheumatic arthritis of the left elbow, with excision of the joint, which was shown. The patient, a woman of forty-seven, had, seven years ago, pain in the right shoulder, supposed to be rheumatic. About five years ago the left arm began to trouble her. Six years ago she had some rheumatic trouble in the feet. There is no consumption in the family at all except one aunt. The pain has been so great in the left elbow during the last six years that she has been disabled most of the time. Finally, it was put up in plaster-of-Paris by the attending physician Dr. McColester, of Waltham. The immobility resulted in some alleviation of pain, but not complete. Meantime the left elbow has become more or less ankylosed. On careful examination there was undue prominence on each side of the olecranon. This soft swelling did not seem to be tender. Movements of the elbow were extremely painful, especially extension. I have had this case under observation since the 10th of May of the present year. During this time there has been no improvement whatever in the subjective signs. The elbow has been almost entirely disabled and there has been a great deal of pain. After very careful deliberation I decided to try forcible extension to the movements of the joint. Five or six days ago, under ether, I broke up the adhesions and extended and flexed the elbow, and at the same time rotated the forearm. This was followed by a great deal of pain. Dr. Warren saw this case in consultation during the anesthesia, and we both thought that there was probably a tubercular element in the disease. Whether tubercular or not, it seemed best to excise the joint, not only to relieve the pain, but to give a more useful joint than the one she had. The bones were excised on Saturday in the usual manner. I did not use any efforts at hæmostasis. I did not use the Esmarch bandage or tourniquet. It seems to me better to stop the hæmorrhage as we go in operations of this kind, because we thereby avoid in the best manner subsequent oozing and extension of flaps. Patient to-day is sitting up, and there is no pain.

Excision of the elbow is justifiable for simple ankylosis at a right angle, because after an excision the joint is more useful than a stiff elbow. It is also justifiable for pain. If there is any suspicion of tubercular process it seems to me that the operation should be performed as early as possible, and that it is not wise to wait until the bones have become extensively disorganized.

REGULAR Meeting, Monday, November 27, 1853.

NOTES ON PHOSPHATURIA.*

DR. PAUL THORNDIKE presented a paper with the above title.

DR. E. S. WOOD: I am very glad to have been able to hear Dr. Thorndike's paper. I thoroughly agree with him that the first class of cases to which he referred, the milder cases of phosphaturia, really is not entitled to the term phosphaturia. It is not the condition of things which at all affects the quantity of the phosphoric acid eliminated, but simply the precipitation of the earthy phosphates due to a change in the reaction of the urine, and a good deal of distinction should be made between the temporary and permanent condition. As we know, temporary phosphaturia is physiological and not pathological. It is of very frequent occurrence in the urine of perfectly healthy persons after the ingestion of a good deal of vegetable food or vegetable salts. The permanent condition, however, which results in the permanent alkalinity of the urine by a fixed alkali is dependent upon just the conditions which Dr. Thorndike has mentioned, disturbances of digestion, nervous disturbances; and such cases used to be treated sometimes by the antacids simply for the purpose of changing the character of the reaction of the urine, an erroneous treatment, unless with the idea of giving the mineral-acid tonics, which prove generally of very excellent service, but not by virtue of their antacid effect, only by virtue of their tonic effect. The quantity of the earthy phosphates which may be precipitated from the urine under such circumstances may be made to vary a good deal with the character of the food. Lime salts and waters containing lime will prevent, to a certain extent, large quantities of earthy phosphates in the urine, for the reason that chalk when united with phosphoric acid in the alimentary canal will pass through without being absorbed. The form Dr. Thorndike has spoken of under the head of phosphoric diabetes I was glad to hear him mention because those cases are in my experience exceedingly rare, and it is, I think, largely on account of their rarity that they cannot be classified under any special set of clinical conditions. In all my experience in urinary analysis I have never met with but one case of what should be considered, I think, true phosphaturia, or what has been spoken of as phosphatic diabetes. This term was given by Tessier, I think, because it had sometimes alternated with the saccharine diabetes; and the explanation was given which Dr. Thorndike has mentioned. That class of cases is always characterized by polyuria and polydypsia, with various symptoms referable to the nervous system and other organs in the body. One class of symptoms reported by Tessier was in the early stage of phthisis where there was an immense amount of earthy phosphates in the urine, with polyuria and polydypsia; the explanation is given by him that the earthy salts are derived largely at the expense of the pulmonary tissue. I have tried to find similar cases, and have received the co-operation of a number of clinicians; but I have never been able to duplicate any of Tessier's cases. I have never in early phthisis been able to find a polyuria with a large excess of earthy phosphates. The only case of true phosphaturia which I have met with since I have been connected with the Medical School was in the case of a gentle-

man whose urine I had examined from time to time for a good many years; and in 1879 a large number of analyses of his urine showed this condition. I never saw the patient himself, and do not know the symptoms. February 25, 1879, my record shows four quarts of urine passed in twenty-four hours, containing 9.6 grammes of phosphoric acid, the average being 3 to 3.5 grammes. The urine on March 7th was 3,500 c.c.; between three and four quarts on four successive days; and the amount of phosphoric acid on the 12th of March was 7.4 grammes, and the amount of urine 3,700 c.c.; no albumen and no casts. There was a little evidence of some irritation about the prostatic region which was easily explained by the age of the patient. That condition lasted but a comparatively short time, perhaps two months, and then disappeared. The polyuria continued, but the phosphoric acid fell to its normal quantity. A year or two later examination showed, instead of phosphaturia, decided oxaluria; large quantities of calcic oxalate were found in the sediment, and albumen and casts appeared later. Those have continued, and the condition of the urine at the present time is that of chronic nephritis of the interstitial type, which must have begun somewhere in 1879 or 1880. That is the only case in which I have ever been able to find those large quantities of phosphoric acid in the urine, with polyuria and polydypsia, where it was not due to the ingestion of phosphoric acid or phosphates.

One class of Tessier's cases is given as a purely nervous disease; and he considers that the nervous tissues which are rich in phosphorus are undergoing an unduly rapid metabolism, which accounts for the excess of the earthy phosphates in the urine. In all of these cases the excess of phosphoric acid is in the form of the earthy phosphates, and not in the form of the alkaline phosphates.

DR. R. T. EDIS: I was rather glad to find from the remarks of Dr. Thorndike and Dr. Wood that the notion of the relation of phosphates to the disintegration of the nervous tissue has been exploded. There used to be a good many stories in the books. One of them is quoted by Dr. Holmes in one of his non-medical works, to the effect that a clergyman used to pass a large quantity of phosphates every Monday morning; that probably had more to do with the Sunday dinner than with the sacred exercises in which he participated. A number of years ago I made some observations on myself, taking some days when I was as lazy as I could be, and others when I was busy; and I could not see anything decisive in the quantitative changes.

DR. THORNDIKE: In protesting against the use of the term phosphaturia, I only meant to find fault with it as descriptive of a well-marked clinical condition, such as one commonly reads of in books, and might be led to suppose occurred as commonly as albuminuria, for example. I did not mean to say that there was no such thing as true phosphaturia, of course.

A HOSPITAL WHILE YOU WAIT.—The Metropolitan Asylums Board of London, to provide for the rapidly increasing number of fever patients, recently had a hospital built in nine weeks, with wards all complete and with accommodation for 400 patients, 40 "charge" nurses, 50 assistant nurses and 76 female servants, every hygienic and sanitary appliance, corridors, kitchens and consulting-rooms.

* See page 124 of the Journal.

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283 WASHINGTON STREET, BOSTON, MASS.**THE CONTAGIUM VIVUM OF VACCINE AND OF SMALL-POX.**

SOME recent investigations undertaken to ascertain the nature of the germs of vaccine, by Buttersack, at the Imperial Hygienic Institute of Berlin, were detailed by him at a meeting (December 15, 1893) of the Society of the Physicians to the Charité, and are of interest.¹

All pathologists are agreed that the specific microbes of vaccine must exist in the clear lymph of the vesicle, and that these micro-organisms are the agents of the vaccinal infection. The experiments of Straus, Chambou and Menard (1890) have proved that the lymph when filtered through a plaster filter loses entirely its properties,² so that its virulence is due to the figured elements which it contains. Various bacteria have, it is true, been found in the vesicles and pustules of vaccinia (bacterium termo, proteus vulgaris, staphylococcus pyogenes aureus, cereus albus, etc., also peculiar cocci discovered by Hallier, Quist, Voigt, Garré, and others), but none have yet been proved to possess the peculiar properties of vaccine.

Buttersack bases his investigations on the assumption that the real germs are in the lymph of the vesicles, but are invisible, and that any microbes hitherto found there are simply accidental, unessential, or accessory. The vaccinal lymph is clear and transparent; the elements which it contains must then have the same index of refraction as the liquid itself. If this were otherwise, the lymph would be turbid, and the more so the greater the number of elements in it not translucent. Now, in order that microscopic elements may remain thus invisible in lymph, whose index of refraction is about 1.34, it suffices that the difference of their indices of refraction from that of the liquid which contains them shall be 0.1 or a little more. This difference is inappreciable to ordinary sight, especially if the observer is looking through the microscope, and the object is unknown. Even for an object that is known and not of microscopic dimensions, a difference

of index equal to 0.05 between it and the liquid in which it exists, assures its complete invisibility.

It is, then, because both the liquid and the germs refract alike that the latter are invisible in the lymph. To render visible the germs, it would be necessary to examine preparations of lymph in a medium with refractive index widely different from the ordinary. The air, whose index of refraction is one, can be utilized for this examination, and in slides of dried lymph examined without any refractive medium but the air, a method already employed by Koch to reveal the cilia of certain bacteria that do not stain, Buttersack has been able to detect a certain number of formed elements. To test the value of this mode of mounting, Buttersack first tried it on blood globules and certain bacteria of known species. All these bodies appeared in these preparations with contours incomparably more clear and well-defined than when seen in water.

The germs of vaccine, according to this authority, are not merely distinguished by their peculiarity of refraction; they are also very small, and have little tendency to aggregation in masses. Vaccinal lymph, as is well known, remains active under great dilution. The vaccinal corpuscle, moreover, seems to have different chemical properties from those ascribed to other known germs, and this explains the failure of attempts to stain it. In short, this germ is presumed to be small, pale, and unsusceptible of staining.

Buttersack has studied the lymph of the vesicles of children, recently vaccinated. This lymph, taken when perfectly clear and dried on the cover-glass, is gently washed in water and fixed to the glass slide with a couple of drops of wax and examined by means of apochromatic objectives. In these conditions, Buttersack has seen corpuscles in great number, very small, pale, always of equal size, sometimes grouped in chains. In continuing the examination, he perceived an extremely fine network constituted by pale filaments. These could always be followed to a considerable extent, and contained in their meshes an abundance of the little corpuscles above described. These filaments were preponderant in pustules, growing and completely developed, while the corpuscles preponderated in pustules in process of retrocession.

Buttersack's investigations have included one hundred vaccinated children, and always gave the same results. The slides invariably contained corpuscles and filaments in varying proportions. Control experiments were made with dried fluid obtained from phlyctenæ in different stages, from the pustules of acne, from various transudations and exudations, from normal lymph, but there was entire absence of the characteristic vaccine corpuscles and filaments.

From the point of view of culture, there was not much to expect of the ordinary media which have thus far proved refractory under the manipulations of other experimenters. Buttersack has attempted preferably the culture of the germs in the living animal. He introduces under the skin of a calf a capillary tube filled with vaccine lymph. At the end of three or four days

¹ Deutsche Med. Woch., No. 51, 1893; Médecine Moderne.² Charcot: Traité de Médecine, t. II, p. 177.

there appears at the site of inoculation an intense infiltration, the liquid of which contains filaments. This liquid by inoculation in other animals and in children, gives rise to typical vaccine vesicles. Buttersack anticipates the objection that these filaments may be nothing but fibrine. The vaccine filaments are everywhere of uniform thickness; not so with fibrine filaments. Moreover, the former cross and intercross with a clearly defined angle, and without fusing together, in this respect markedly differing from fibrine. Fibrine takes certain staining fluids; the vaccine filaments do not.

Lastly, the elements of vaccine undergo a certain biological process of development, as Buttersack's experiments show. The principal of these experiments consisted in the introduction of sporiferous lymph in a deep cutaneous wound of the forearm; six hours afterwards he found several isolated filaments in the serum of the wound; at the end of twelve hours, they were much more abundant; twenty-four hours after, the complete network was formed, and on the third day spores luxuriated, and became predominant.

Hence, then, the constant presence of these elements on vaccinal lymph, their absence in other affections, their biological evolution in harmony with the clinical syndrome, lastly, their transmission by inoculation tend to prove their importance in the act of vaccination.

It remains to be established whether these elements exist also in small-pox. Some researches undertaken on some small-pox patients at three different towns, incline Buttersack to believe that they do. In recent cases, he has observed the filaments, and in advanced cases the spores accumulated in the pustule and in the lymph of the neighboring cutaneous region. The variolous substance inoculated in calves, furnished the same infiltration with the same filaments and spores as when ordinary vaccine lymph was the infectant material.

A fuller, illustrated report, of these observations will be issued in an early publication of the Imperial Hygienic Institute. In this connection our readers will recall the report of the work done in this direction by the late Dr. S. C. Martin, of Brookline, published in this JOURNAL, December 14, 1893.

PROPOSED LEGISLATION CONCERNING CAPITAL PUNISHMENT IN OHIO.

THE Ohio Legislature is to have under consideration this session a bill to substitute physiological experimentation for capital punishment, or rather to make the criminal subject first to experiment and then to execution. The proposed bill, which is offered as an amendment to the present act dealing with capital punishment, provides:

(1) "That all persons sentenced to death by any court having jurisdiction in the State of Ohio, shall be held as subjects for experimental research; that such experiments shall be conducted in the interests of science and society,

and shall be regulated by approved rules of humane treatment to avoid all unnecessary pain; that in the preparation for such experiments, where pain would be occasioned, anæsthetics shall be administered to the extent of complete insensibility to pain, and during the progress of the experiment narcotics shall be judiciously used to allay any pain, and the condemned person shall not be maltreated in any way; that after the conclusion of such experiments the criminal shall be again anæsthetized and put to death while in a deep sleep and entirely insensible to pain; that the executioner shall be an expert physiologist duly appointed and authorized by the State, and that such appointments to execute and conduct such experiments shall be vested in the Governor, and shall consist of one executioner and five assistant physiologists, with a like number of deputies, who shall hold their office for the term of good behavior, except upon proof of incompetency; and no one so appointed shall be removed without sufficient cause, which shall be left to the discretion of the Governor, and that all appointments to fill vacancies caused by death, resignation or removal, shall be made as prescribed in the foregoing.

(2) "All executions of the death penalty, according to the provisions of this bill, shall take place within a building provided for that purpose, and so constructed as to safely and comfortably lodge all capital criminals until the completion of the execution; that such criminals shall be in the custody of a warden or deputy warden and board of managers, who shall provide for their safe and comfortable keeping; that the execution of the sentence shall commence on the day fixed by the judge passing the sentence, unless a suspension of execution be ordered by the Supreme Court or two judges thereof.

(3) "That no one shall be present at experiments and executions except the warden or deputy warden in charge of the prisoner, the executioner, assistants, and deputies, and those who have duly qualified themselves to comprehend the experimental work; that such qualifications shall be determined by a board of examiners, who shall issue a certificate which shall admit the holder to witness the experiments and executions; that at the conclusion of each execution a written report shall be required of the body of physiologists which shall contain a correct account of the result of the experiment and execution, and that such a report shall be made within thirty days from the infliction of death, and recorded in the archives of the institute."

It has often been suggested, with some degree of reason, that criminals condemned to death be allowed reprieve on the condition of subjecting themselves to experiment; but certainly to pass a law that such persons shall be used for vivisection and then executed even while still under anæsthesia, is as far beyond all bounds of legitimate action as it is abhorrent to the sense of humanity.

Before the same Legislature we understand another bill has been introduced, prohibiting the performance of circumcision. Are these proposals to be classified under tragedy or under comedy?

MEDICAL NOTES.

SOME VACCINATION STATISTICS. — The official report of the epidemic of small-pox which occurred in the borough of Halifax, Nova Scotia, between the middle of March, 1892, and the end of September, 1893, shows that there were 513 patients admitted to

hospital, 44 of whom died, a mortality of 8.5 per cent. The vaccinated cases numbered 425, with 8 deaths, or 1.8 per cent. mortality; the unvaccinated, with 36 deaths, or 40.9 per cent. mortality. There were two cases in revaccinated persons, one having been "revaccinated inefficiently five years ago," the other "revaccinated thirty-four years ago."

TO PERPETUATE DR. BLANCHE'S MEMORY.—The City of Paris has changed the name of the Rue des Fontes to Rue Blanche, in honor of Dr. Antoine Louis Blanche.

A GIFT FOR A VIRGINIA HOSPITAL.—The Sheltering Arms Hospital at Charlestown, W. V., has received a gift of seventeen thousand dollars from the widow of Ex-Governor Olden of New Jersey.

DEATHS FROM CARBOLIC ACID IN ENGLAND.—Between February, 1892, and November, 1893, there were two hundred and thirty deaths in England due to taking carbolie acid. One hundred and seventy-four of them were suicidal.

EXAMINATION FOR THE MARINE-HOSPITAL SERVICE.—A board of medical officers will meet, Monday, April 16, 1894, in Washington, D. C., for the purpose of examining candidates for appointment to the grade of Assistant Surgeon, in the Marine-Hospital Service. For further information address the Supervising Surgeon-General, U. S. Marine-Hospital Service, Washington, D. C.

CHEMISTRY AND READING NOTICES.—Our esteemed contemporary *The Lancet* has started a department of Analytical Records, which to Americans who are supposed not to have a very keen medico-ethical sense seems very strange. It has equipped a laboratory, and everything is grist to the scientific mill therein. We find *The Lancet* publishing analyses of champagne, lager-beer, bon-bons, cigarettes, malt, wine, tea, gin, etc. Curiously enough everything analyzed and reported upon is found to be good; so that the state of mind of *The Lancet's* chemist is very suggestive of that described in Genesis at the end of creative work.
— *New York Medical Record*.

BOSTON AND NEW ENGLAND.

SMALL-POX IN BOSTON.—Two new cases of small-pox have been reported to the Board of Health during the week ending at noon February 7th. There have been no deaths. There are at present nine patients in the hospital, all of whom are doing well.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon February 7th, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: scarlet fever, 47; diphtheria, 41; measles, 7.

THE PUBLIC HEALTH COMMITTEE OF THE LEGISLATURE.—The Public Health Committee of the Massachusetts Legislature for the present session consists of Senators E. B. Harvey, M. D., of Worcester County, E. G. Frothingham, of Essex County, E. A. Besson, of Essex County, and Representatives Crane, of Som-

erville, Tuttle, of Boston, Mahoney, of Boston, Johnson, of Lynn, Harvey, of Springfield, Fisk, of Dennis, Goodell, of Brookfield, and Marsh, of Hanover. It gave a hearing yesterday upon two proposed measures—one a bill to provide for medical registration, and the other for the State ownership of vaccine farms.

THE LYMAN PRIZE.—The Lyman Prize established for graduates of the Boston City Hospital, of not more than three years' standing, by Mrs. George H. Lyman, in memory of her husband, Dr. George Hinckley Lyman, who was a member of the medical staff of the hospital for many years, has been awarded this year, in two equal parts of \$150 each, to Dr. John Lovett Morse, of Boston, for an essay entitled, "A Bacteriological Study of Four Hundred Cases of Inflammation of the Throat in Diphtheria and Scarlet Fever, with Special Reference to Pathogenesis," and to Dr. Arthur Howard Wentworth, of Boston, for an essay entitled, "A Study of the Blood in Early Life." The usual prize is \$150, but no prize was awarded last year.

A REQUEST TO A NEW HAVEN HOSPITAL.—The will of Mr. Andrew L. Kidson of New Haven, Conn., bequeaths five thousand dollars to the General Hospital Society of New Haven.

THE BOARD OF MEDICAL EXAMINERS, M. V. M.—By a recent order of the Commander-in-Chief, the Board of Medical Examiners, M. V. M., is now constituted as follows: Lieut-Colonel Freeman C. Hersey, Medical Director Second Brigade, President; Lieut-Colonel Edward J. Forster, Medical Director First Brigade; Major Otis H. Marion, Surgeon First Regiment Infantry, Recorder. Brigadier-General Herbert L. Burrell and Major Charles C. Foster are relieved from further duty on the Board by the same order.

THE ALLEGED DEATHS FROM VACCINATION IN LOWELL.—The two deaths in Lowell week before last which were reported in the daily papers with much heading as due to vaccination, were due to other causes. From official sources we learn that the death returns gave "tonsillitis" and "bronchitis" as the causes. The several cases of "bad arms" which came to notice were "considered due not to impure vaccine, but to the introduction of foreign micro-organisms by faulty technique."

NEW YORK.

INSANITY STATISTICS.—The annual report of the State Board of Charities, submitted to the legislature February 1st, shows a total increase in the number of insane in the institutions of the State from October 1, 1880, to October 1, 1893, of 8,842. The increase in population from 1880 to 1892 was 28 per cent., while the increase of the insane in the institutions was 83 per cent. A part of this increase, it is stated, may be accounted for by the greatly increased accommodations, by means of which many insane had been taken from their homes to institutions. Besides, the better care of the chronic insane has doubtless considerably pro-

longed their lives. Still, the Board believes that the increase is not wholly accounted for by these causes. The number of patients in the various State hospitals for the insane on October 1, 1892, was 7,484; the number of admissions during the year ending September 30, 1893, was 2,586, and the total number under care during the year, 10,070, as against 9,435 the preceding year. The number of insane in the county and city poorhouses and asylums of the State, exclusive of New York and Kings Counties, October 1, 1893, was 610, as against 857 October 1, 1892. The number of admissions to the asylums of New York City during the year ending September 1, 1893, was 1,699, as against 1,592 admitted the previous year. Overcrowding still continues in the asylums of New York. The one on Blackwell's Island, with a capacity for 1,110, has 1,762 inmates, and that on Ward's Island, with a capacity of 1,620, has 2,349 inmates. Other buildings however are to be fitted up on Ward's Island which will accommodate 1,200, and thus relieve the overcrowding in these institutions.

MORTALITY. — The general health of the city, as indicated by the mortality reports, continues very fair for the mid-winter season. During the week ending February 3d, there were 848 deaths. Of these, 18 were from influenza, a decrease of six from the preceding week. The contagious diseases in general, however, show some increase, and the deaths from measles amounted to 28. Diphtheria continues to be the most prevalent and serious, and shows a mortality of 58 for the week. The deaths from scarlet fever numbered 20. During the week an unusually large number of births were reported, 1,187. As a rule, a large number of births are left unrecorded by physicians and midwives, and of late the Board of Health has been making a house-to-house canvass of the city in order to ascertain approximately the number of births which occurred in 1893.

Miscellaneous.

CREMATION IN PARIS.¹

In November, 1887, a law was passed allowing the French citizen to dispose of his dead by cremation instead of burial, if he so chooses. All such cremation is carried on under the control of the Board of Health and under the surveillance of the municipal authorities, who issue permits for incineration only upon a written request from the legal representative of the family, accompanied by a certificate of the cause of death from the attending physician and the consent of a sworn medical official appointed to verify the cause of death in such cases. The ashes after cremation may not be placed, even temporarily, in any but regular places of sepulture.

At the present time Paris is the only French city possessing a cremation establishment. Previous to the law of 1887 she had obtained the permission of the government to build a crematory to dispose of the hu-

man remains from the medical and anatomical schools; and this plant served for the first incinerations.

The law prescribes most minutely the details of the procedure and the preparation of the body. The ashes are placed in an urn paid for by the family. If the urn is to be placed in a private tomb, it may be of any design; but if it is to be put in the municipal columbarium, it must have the following dimensions: height 28 centimetres, length 48 centimetres, width 28 centimetres. Urns containing funeral ashes may not be made part of any monument, but may be buried if the grave is marked by a stone.

The charge for cremation varies according to the convoy, the services being free. The cost runs from 50 to 250 francs. The expense of private cremations has been much reduced by the fact that the city is obliged to maintain a cremation furnace in constant operation day and night, in order to dispose of the remains of the 2,000 bodies annually received from the dissecting-rooms. There is only one columbarium, which contains 354 cases.

The statistics of cremation in Paris up to the first of last November are as follows:

	Incinerations at request of family.	Remains of bodies from hospitals, etc.	Embryos under four months.
1889	49	483	217
1890	121	2,188	1,079
1891	134	2,369	1,238
1892	159	2,360	1,426
1893, to October 31st,	150	1,965	1,194
	613	9,414	5,151

In spite of the advantages from a sanitary point of view, and of the ease and cheapness of procuring service, cremation has won favor but slowly in Paris, and even more slowly in the rest of France. The government has done much to extend the use of incineration, but with very little effect. Two facts have especial bearing on this: the publicity attending cremation and the religious repugnance of a Roman Catholic people.

WHAT "MENTAL CURE" IS.

In a recently published volume entitled "*The Philosophy of Mental Healing*," the author, Mr. L. K. Whipple, gives the following definition of what mental healing is in the minds of those devoted to that science:

"Mind is the intelligence of the body. Mind thinks; its thought is registered on the body in physical element. The thought is a model of the idea; the body and its conditions are a constructed copy of the model. When the model changes the copy correspondingly changes. This rule holds good with regard to every part of the system, but is especially true of the most finely constructed parts, because these are subjected to the quickest changes. In the finest nerve mechanism important changes frequently occur instantaneously, while in the coarser structure of bone, cartilage and ligament they take place more slowly. The instant the mental cause ceases its disturbing vibrations, nature begins natural restorative activity in every part of the physical system; this is as certain as that water will run down hill. . . . When these truths are intelligently comprehended the fact becomes evident that disease—whatever its name or nature—must originate in some mental activity afterwards registered in the body, where that mode of action is outwardly expressed. Knowledge of this fact is the key to accurate diagnosis,

¹ La Médecine Moderne, 1893, 103.

and a sure guide to adequate mental therapeutics. . . . Thorough knowledge of the natural laws of human existence, based upon intelligent understanding of the fundamental principles of spiritual life, each thinking mind has power to reverse every wrong mode of action, and to establish right conditions. Exercise of this power in removing disease is a legitimate mental cure. Its nature is metaphysical.

OBITUARY.

MEMORIAL OF HOWLAND HOLMES, A.M., M.D., OF LEXINGTON, MASS.

At a meeting of the Middlesex East District Medical Society held at Wakefield, Mass., January 24, 1894, the following memorial and resolution was presented and adopted:

The members of this Association desire to place upon record their high appreciation of the life, character, personal and professional worth of our late associate-fellow, Howland Holmes, A.M., M.D., of Lexington, Mass., whose sudden death has brought grief to us all.

Dr. Holmes was born in Halifax, Plymouth County, January 16, 1815, and was a lineal descendant on his mother's side from John Alden, the Pilgrim, and on his father's side from John Holmes, who was in Plymouth in 1632. He was fitted for college at Bridgewater, Mass., and Exeter, N. H., and took his degree of A.B. from Harvard in 1843, A.M. in 1846, and that of M.D. in 1848. Dr. Holmes was made an associate member of this Society soon after its organization, and so long as he lived was a constant and interested attendant upon its meetings, endeavoring always to contribute his full share to their interest and profit.

From this time forward his genial presence will be sadly missed. He closed a long, a useful, an honest, and an honorable life in a moment. The swift-winged messenger of death met him while returning to his home from one of his accustomed errands of mercy. That messenger came to him unheralded, and in a twinkling he left us and was gone.

We tender our heartfelt sympathy to his afflicted family in this great trouble, and point them to the consolation to be derived from the knowledge of his long and useful life, and that he was spared the mental and physical infirmities of old age.

Dr. Holmes was distinguished in a marked degree for his clearness of perception, the firmness of his convictions, his courage in expressing them, and his geniality of manner. He was highly social in his nature, and, aside from his own domestic circle, enjoyed the society of none more than that of his professional brethren. We knew him long and knew him well.

J. M. HARLOW, }
W. S. BROWN, } Committee.
J. S. CLARK, }

THERAPEUTIC NOTES.

THREE CORYZA PRESCRIPTIONS.—In a recent discussion before one of the Parisian medical societies, the three following prescriptions were given, as having been found of value. M. Grellety advised the free use of this powder, especially in the early stages:

R Betol 2.5 grammes
Menthol 0.25 grammes
Cocaine 0.50 grammes
Powdered burnt coffee 1.5 grammes M.

M. Huchard recommended a snuff containing less cocaine:

R Bismuthi subnitrat 15 grammes
Camphor 5 grammes
Cocaine hydrochloratis 0.05 grammes M.

M. Julien preferred an ointment to a dry powder:

R Vaseline 30 grammes
Acid. borac 5 grammes
Menthol05 to 20 grammes M.

A REMEDY FOR TRIGEMINAL NEURALGIA.—Nægely¹ recommends the following method for quieting the paroxysms of trigeminal neuralgia, hemicrania, globus hystericus. The great horns of the hyoid bone are pressed by the two thumbs of the patient or physician up against the larynx for a minute or ninety seconds. While he cannot give an explanation of the action, he has found it effective in many cases.

GASTRIC NEURASTHENIA.—Rummo and Braccini² recommend the following combination of the zinc salts in acute neurasthenia, especially when attended by gastric symptoms:

R Zinc phosphidi 0.1 gramme
Zinc bromidi 1.0 "
Quinine bromohydrat. 1.5 "
Ext. nucis vomicae 0.15 "
Misce. Ft. pill., No. xxx. Sig. One three times a day.

ALBUMINURIA AND PHOSPHATURIA.—In a communication to the Académie de Médecine, M. Robin gave the following outline of treatment for cases of phosphatic albuminuria: The first point, in importance, is to combat the nutritive disturbances, and the catabolism which leads to an undue elimination of phosphorus. Following this the attention should be given to preventing the destruction of the blood globules and to controlling the albuminuria. The hygienic treatment consists in moderate exercise, massage and complete intellectual rest. The diet should contain, above all else, vegetables, rich in phosphorus and potassium, as beans and lentils; white flour and sugars which retard oxidation are contraindicated. Beef, mutton and shell-fish are allowable, but meats rich in gelatine, and fish are to be forbidden. As medicinal treatment the following are especially commended for the nutritive troubles: arseniate of soda, cod liver oil, the glycero-phosphates, hypophosphites, sulphate of quinine. Iron, arsenic and strychnine combat the destruction of the blood globules; while gallic acid, and the iodo-tannic preparations give good results in controlling the albuminuria.

Correspondence.

THE EXPERIENCE OF TWO WOMEN PHYSICIANS WITH SMALL-POX.

BOSTON, February 3, 1894.

MR. EDITOR:—Dr. White's personal experience with small-pox, related in the *Boston Medical and Surgical Journal* recently (January 24, 1894), recalls our own vivid acquaintance with the same disease.

In the summer of 1870, we were visiting hospitals in Paris, being, with Dr. Mary Putnam Jacobi, the only medical women there. We were in good health, and full of enthusiasm about our work, but were also intensely interested in the Franco-Prussian War, which was then in progress. Since the 7th of August, Paris had been declared in a state of siege, and its bombardment was only a question of time.

Small-pox was epidemic in the city, the mortality from the disease averaging about four hundred deaths a week. There seemed to be no public or private precautions taken against its spread, and no special hospitals devoted to the care of its victims. A personal friend of the family with whom we boarded, died of confluent small-pox, and his friends watched with him several nights before his decease.

¹ Mercredi Médicale, 1893, No. 31.

² Semaine Médicale, 1893, 64.

He had a public funeral in one of the churches to which written invitations were sent, according to the custom there.

Naturally we were free from fear or apprehension of the disease, so that when we decided to follow the service of Dr. Hérard, in the old Hotel Dieu (the new one was not then ready for occupancy) the fact that one of his wards was devoted to small-pox, did not serve to deter us from our plans. We took the precaution to be vaccinated, however, for the first time since infancy. It was hot weather, and it was found months later that the virus had been kept some days, and was probably inert. At all events, the vaccinations did not take, and in consequence we considered ourselves safe from infection.

Our first visit with Dr. Hérard was September 2d. At the close of the regular visit we accompanied him to the small-pox ward, which contained twelve beds, all occupied. The instant we entered the ward, we noticed the peculiar musty, sickening odor, which seemed characteristic of the disease. That day there were no cases of unusual severity, but on later visits, we saw cases both confluent and hæmorrhagic, extremely repulsive to look at, with faces swollen beyond recognition. Stupor or delirium fortunately made these patients partly oblivious to their sufferings. Very little treatment seemed to be given, and in no cases were the faces protected in the slightest degree. Therefore all we gained, was some knowledge of the appearance of the disease in its successive stages.

We had decided to remain in Paris during the siege, under the protection of the American minister. The Republic had been proclaimed September 4th, the city was being provisioned, troops were arriving from the Provinces for the defence of Paris, and were being quartered on the inhabitants. We were well and anxious to stay, when on the 13th of September, there appeared in the papers a peculiarly strong appeal from General Trochu, the Military Governor of Paris, in which he implored all foreigners and those not absolutely needed, to leave the city at once, as the difficulty of providing food would be so great that "useless mouths" must go.

The following day we went to the American Embassy and were advised to leave the city that evening. Realizing that as soon as the city gates were closed, we should be cut off from communication with the outside world, we at last reluctantly resigned ourselves to going in the last train that would be allowed to leave the city. The Prussians were already in Versailles, and the shorter routes to England had been destroyed by blowing up the bridges. Therefore we were obliged to go by the way of Dieppe and Newhaven. Since we were allowed to carry only hand baggage with us, it became necessary to pack and store all our belongings. This, with other matters, kept us very busy during the hours that remained before our departure, so that, when we took our places in the crowded train at six o'clock, we were thoroughly tired out.

We reached Dieppe at one A. M., and drove to the boat in an omnibus. It was three hours before we started, and the wait was very tiresome. The boat was small and uncomfortable, and so overcrowded that it was impossible to find proper accommodation, so we were obliged to lie in cramped positions on seats next the outside rail on deck. The night was damp and raw, and we could not obtain extra coverings, so we alternated with cold and heat all through that wretched night. The passage took seven hours, nearly twice its usual time. We finally landed in Newhaven, about eleven A. M., with excruciating headaches, vertigo and fever, and aching all over. We secured comfortable seats in a compartment of the train in waiting, and bought some biscuit and fruit, as we felt unable to take a breakfast at the hotel near by.

London was reached in about two hours, and we drove at once to the hotel. We retired early, but were burning with fever or in profuse perspiration all night, while our headaches were constant and severe. We had no lumbar pain, however, but a bruised feeling all over. In the morning we wondered that we felt no better, but were inclined to attribute our discomfort to the fatigue and excitement of the few previous days. We felt that quiet and rest for

a time would restore us to our wonted health. Neither of us suspected we might be suffering from premonitory symptoms of small-pox.

Throughout the day following our arrival, September 16th, we were never free from chilly sensations and high fever, with a sense of extreme prostration, headache, and complete anorexia. No relief followed the taking of hot baths, hot punch and Dover's powder; indeed, we felt even worse. The following day, all our symptoms became intensified. We remained in bed, and concluded we must be in for something serious.

Up to this time we had done what we could for ourselves, and kept our real condition as far as possible from our friends, but we knew they felt very anxious about us, and so we decided to call a physician.

Accordingly, a note was written to Miss Garrett, M.D. (now Mrs. Garrett-Anderson) the only woman physician in London. She was the only woman graduate of Apothecaries' Hall in London, the doors being closed to other women after she obtained her degree. Later she had taken a degree at the École de Médecine in Paris, being its first woman graduate. We already had a letter of introduction to her, which we enclosed in the note asking her to visit us professionally. She promptly responded to the call, and found us with temperatures of 104° and 105° respectively, with pulses to correspond, but reserved her diagnosis. Cooling draughts and quinine were prescribed, but with little relief.

The next day, September 18th, the temperature had lessened slightly, but the lassitude was still extreme, and there was a peculiar feeling all over, as if one were incased in india rubber half an inch thick. We were obliged to stay in bed all day, too wretched and miserable to care for anything. All through that night, the one who later had the most eruption complained of a peculiar taste in the mouth and throat, with considerable soreness, and both were conscious of an odor which for the first time made us think of "small-pox." The feeling of shot under the skin of the forehead was marked. We mentioned to each other our suspicions that we were suffering from small-pox, and anxiously waited for daylight to confirm the diagnosis. In the morning faces and parts of the body were seen to be covered with blotches like measles, and the fever and discomfort had moderated somewhat.

Naturally our friends were much alarmed, and thought of small-pox at once, as they knew it was in Paris. We persuaded them to keep away until after the doctor's visit. The moment she entered the door she exclaimed, "Why, is it possible you have the measles?" But as she approached nearer, she added, "Oh! I am afraid it is the small-pox." A close inspection proved the correctness of the diagnosis, and then we began to consider what we should do. At that time there was no good small-pox hospital in London, though one was built soon afterward. No hospital would take us, the hotel proprietor was in despair at having such a dreaded disease in his house, and naturally eager to get us away at once, while we were equally eager to depart, but in a quandary where to go. Miss Garrett was full of sympathy, and said she would see what could be done, and meanwhile would send us at once a nurse with directions about our care. Our friends were banished from our room, and all vaccinated as soon as possible.

An hour or two of waiting intervened, when a tap at the door was followed by the entrance of a good, motherly-looking nurse who had received instructions what to do for us. In a short time we were dressed and thickly veiled, put into a cab, and carried to a private house not far away, where we were put into comfortable beds in a large room on the top floor. The occupant of the house had been away on the Continent for some weeks, and the opportunity had been taken to have a house-cleaning. The two upper floors were thoroughly dismantled, with carpets up, so they were in the right condition for our reception. No one was on the floor with us but our good nurse. Antiseptic precautions were instituted at once.

With the exception of our banker, who had been a victim of the disease in Paris, our friends were not allowed to

know of our whereabouts, although they were kept acquainted with our progress. We had the best of care, and every reason to be thankful at our good-fortune.

The partial remission of symptoms the day the eruption appeared, was of course, but temporary, and fever appeared with renewed energy that evening. The fever and restlessness caused by the discomfort and excessive itching was so great that the temperature rose again to 105° in one case, and continued at that height several successive days. The eruption rapidly extended over the body, and to the feet which were much swollen and painful. Sleeping-draughts were a necessity, and the feet were wrapped in soothing lotions, kept constantly wet. The other case was milder, though the temperature frequently rose to 104°.

Our room contained two large windows, which were kept open continually, but darkened by heavy curtains, while a constant fire was kept in the open fireplace for ventilation. A feeble light was supplied by a lighted candle placed behind a screen. In this way the light was kept from our faces, and the air was kept out by the manner in which they were treated. Our faces were bathed with a solution of aromatic vinegar, which allayed the itching, then glycerine applied with a soft brush, and finally a covering of soft linen with apertures for the eyes, nose and mouth. This process was repeated frequently, and undoubtedly was of benefit. Every day a large portable tub was wheeled into the room, and each in turn carefully lifted into it and bathed in tepid water containing oatmeal and a disinfectant. This was accomplished by squeezing the water from a sponge over the surface of the body, which was afterwards dried by patting gently with soft warm towels. Then we were wrapped in soft old linen sheets. This daily bath and change of linen was very cooling and refreshing, and added very materially to our comfort. It was supplemented by sponging surfaces where the eruption was thickest p. r. n.

All clothing, bed-linen, and towels were daily placed in a tub, and disinfected with Condy's solution before being sent to a special woman who did no other washing. All books and papers we handled until well, were either burned or disinfected by baking after we had used them. All letters we wrote when convalescent, were also baked before mailing them. No one contracted the disease from us, which was a comfort.

The papules on the face rapidly developed into vesicles, and those on the body followed more slowly. The burning and itching, especially in the face and feet, was intense, and the hands were kept tied up in linen to prevent scratching. The second week the eruption began to dry up, and the swelling and heat to subside.

Our treatment medically was quinine in an effervescing mixture with carbonate of ammonia, sedatives as needed, chiefly chloral or morphine, stimulants, and a nourishing diet. Milk was chiefly depended upon at first on account of the soreness of the mouth and throat. Neither case had trouble with the eyes. Indeed, it looked peculiar to see a clear circle around the eyes free from eruption, as if protected by glasses. The scalp was not so free from invasion, however, and later the hair fell out, but was rapidly renewed.

The milder case was confined to the bed about ten days after the eruption appeared, and the other two weeks, but was forced to return to bed again for three days on account of an unusually severe attack of pleurodynia contracted by sitting too near an open window the first day she sat up. The third week both began to drive out a little, and in three weeks we joined friends in Scotland. Strength returned rapidly; and on our return to London a fortnight or so later, our physician could hardly recognize us. The disease left no marks, only discolored spots that were noticeable for some months, and eventually disappeared entirely.

It was rather remarkable that we had the disease at the same time, the eruption making its appearance on both the same day. We considered it very fortunate, and it did much to keep up our spirits, as we were companions in misery. During convalescence we entertained ourselves by counting the crusts on each other's faces, one having over two hundred and fifty, the other not half as many.

E. F. P. and C. A. P.

METEOROLOGICAL RECORD.

For the week ending January 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: -

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
J. 21	30.22	29	35	23	63	89	76	N.W.	N.W.	7	7	O.
M. 22	30.06	41	50	32	87	55	71	W.	W.	12	15	O.
T. 23	30.44	34	37	31	65	73	69	N.W.	S.E.	5	5	O.
W. 24	30.10	44	55	32	96	91	94	E.	S.W.	16	28	O.
T. 25	30.33	26	31	20	41	53	47	N.W.	N.W.	14	12	O.
F. 26	30.54	26	32	19	52	68	60	N.W.	E.	10	21	O.
S. 27	30.05	24	28	19	97	87	92	N.	N.W.	21	5	O.
												1.33

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. 60° Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 27, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal.	Typhoid fever.	Diphtheria and croup.	
New York	1,891,306	842	340	15.48	22.20	1.30	.48	9.72	
Chicago	1,438,000	527	124	15.60	13.20	1.20		6.60	
Philadelphia	1,115,562	555	199	9.18	23.40	.54	2.32	4.14	
Brooklyn	978,894	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	222	65	10.80	25.10	—	—	5.55	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	94	25	12.72	16.96	3.18	1.06	5.30	
Cincinnati	305,000	108	—	12.88	22.06	4.60	4.60	2.76	
Cleveland	290,000	81	35	8.61	18.45	1.23	1.23	3.69	
Pittsburg	263,709	100	39	16.00	17.00	—	.40	.60	
Milwaukee	250,000	87	36	20.23	13.09	1.19	2.38	8.33	
Nashville	87,754	25	9	—	20.00	—	—	—	
Charleston	65,165	25	5	4.00	12.00	—	4.00	—	
Portland	40,000	23	5	8.70	4.35	—	4.35	—	
Worcester	98,317	39	16	12.40	33.33	—	—	2.56	
Fall River	87,411	58	19	7.56	18.90	5.67	—	—	
Lowell	87,191	—	—	—	—	—	—	—	
Cambridge	77,100	27	9	11.10	16.50	—	—	3.70	
Lynn	62,666	17	1	5.48	23.52	—	—	—	
Springfield	48,684	7	2	—	14.28	—	—	—	
Lawrence	48,365	21	—	14.28	9.52	9.52	4.76	—	
New Bedford	45,886	17	6	11.76	11.76	—	—	—	
Holyoke	41,278	11	5	18.18	63.63	—	—	9.09	
Salem	32,283	11	1	—	9.09	—	—	—	
Brookton	32,140	15	3	6.66	33.33	—	—	6.66	
Haverhill	31,896	11	4	9.09	27.27	—	—	—	
Chelsea	30,264	16	6	18.75	25.00	6.25	—	—	
Malden	29,394	7	2	14.28	14.28	—	—	—	
Newton	27,656	8	2	25.00	—	—	—	12.50	
Fitchburg	27,146	5	1	—	20.00	—	—	—	
Taunton	26,972	16	3	6.25	37.50	—	—	—	
Gloucester	26,688	10	1	—	—	—	—	—	
Waltham	22,068	6	0	16.66	16.66	—	—	—	
Quincy	19,642	2	0	—	—	—	—	—	
Pittsfield	18,802	5	1	40.00	40.00	20.00	—	20.00	
Everett	16,865	4	2	25.00	25.00	—	—	—	
Northampton	16,331	3	1	—	33.33	—	—	—	
Newburyport	14,073	6	0	—	16.66	—	—	—	
Amesbury	10,920	2	1	50.00	—	—	—	50.00	

Deaths reported 2,828; under five years of age 975; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 348, acute lung diseases 583, consumption 323, diphtheria and croup 171, typhoid fever 35, diarrhoeal diseases 34, measles 31, scarlet fever 22, whooping-cough 19, cerebro-spinal meningitis 16, erysipelas 12, small-pox 6, malarial fever 2.

From measles New York 20, Milwaukee 4, Philadelphia 3, Chicago 2, Worcester and Fall River 1 each. From scarlet fever Boston 6, Chicago 5, New York 4, Pittsburg and Cambridge 2 each, New Bedford, Chelsea and Newton 1 each. From whooping-cough Pittsburg 4, Boston and Washington 3 each, Philadelphia and Milwaukee 2 each, New York, Cincinnati, Cleveland, Somerville and Taunton 1 each. From cerebro-spinal meningitis Chicago and Worcester 3 each, New York, Philadelphia, Cleveland, Milwaukee, Portland, Lynn, New Bedford,

Holyoke, Chelsea and Everett 1 each. From erysipelas Philadelphia 5, New York 4, Boston, Haverhill and Waltham 1 each. From small-pox Chicago 4, New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,468,442, for the week ending January 20th, the death-rate was 23.2. Deaths reported 4,654; acute diseases of the respiratory organs (London) 547, whooping-cough 194, measles 84, diphtheria 74, scarlet fever 16, fever 43, diarrhoea 40, small-pox (Birmingham 6, Bradford 4, Bristol 3, West Ham, Leeds and Hull 1 each) 16.

The death-rates ranged from 15.2 in Halifax to 42.4 in Norwich; Birmingham 29.9, Bradford 22.1, Cardiff 21.4, Gateshead 18.4, Leeds 21.1, Leicester 15.7, Liverpool 26.0, London 23.7, Manchester 21.9, Newcastle-on-Tyne 20.7, Nottingham 18.7, Plymouth 38.0, Portsmouth 16.5, Sheffield 19.1, West Ham 21.0, Wolverhampton 24.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 27, 1894, TO FEBRUARY 2, 1894.

COLONEL JOSEPH R. SMITH and COLONEL BERNARD J. D. IRWIN, assistant surgeon-generals, U. S. A., are detailed to represent the Medical Department of the Army at the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894, and will proceed to the place designated at the proper time.

LIEUT.-COL. FRANCIS L. TOWN, deputy surgeon-general, U. S. A., is relieved from duty at Fort Porter, New York, to take effect on the expiration of his present sick leave of absence and will report in person to the commanding general, Department of the Missouri, for temporary duty in the office of the medical director of that department.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 3, 1894.

T. H. STREETS, surgeon, from U. S. S. "Bennington" and to U. S. S. "Detroit."

O. T. HIBBETT, surgeon, from U. S. S. "Detroit" and to U. S. S. "Bennington."

J. W. ROSS, surgeon, ordered to the U. S. Receiving-ship "Independence."

F. W. OLCOTT, passed assistant surgeon, ordered to the Naval Hospital, Brooklyn, N. Y.

L. W. SPRATLING, passed assistant surgeon, from Naval Hospital, New York, and wait orders.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. - A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, February 12, 1894, at 8 o'clock, P. M.

Dr. H. L. Burrell: "The After-treatment of Appendicitis." Discussion opened by Drs. G. W. Gay and M. H. Richardson.

Dr. J. G. Mumford: "Compound Fractures." Discussion opened by Dr. A. T. Cabot.

Directly after the Secretary's report, Dr. W. T. Councilman will show a specimen of "Peritonitis Due to Embolism of the Mesenteric Artery."

Members are requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., Secretary.

RECENT DEATHS.

ARTHUR RAVARA, M.D., surgeon to the King of Portugal and to the San José Hospital of Lisbon, died recently from the rupture of an aortic aneurism while he was examining a patient preparatory to operation.

PAUL DIDAY, M.D., one of the leading surgeons in France, died in Lyons, January 8th, aged eighty-three years. He had been a pupil of Dupuytren and was one of the founders of the *Lyon Medical*. He was the author of several books on syphilitic and venereal diseases.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Diphtheria. By F. E. Waxham, M.D., Denver, Colo. Reprint. 1893.

How Shall We Make Our Homes Healthy? By Benjamin J. Portugaloff, M.D. Chicago. 1893.

Fifteenth Annual Report of the State Board of Lunacy and Charity of Massachusetts, January, 1894.

Mensuration in the Physical Diagnosis of Pulmonary Phthisis. By George A. Evans, M.D. Reprint. 1893.

Marine sanitäts ordnung, III Bände, Berlin, 1893. Ernst Siegfried Mittler und Sohn. Königliche Hofbuchhandlung.

Some Reasons for the Performance of Circumcision on all Male Infants. By Alex. L. Hodgdon, M.D. Reprint. 1893.

Report of the Kensington Hospital for Women (Non-Sectarian) from October 10, 1892, to October 9, 1893. Philadelphia. 1893.

The Successful Management of Inebriety Without Secrecy in Therapeutics. By C. H. Hughes, M.D., St. Louis. Reprint. 1894.

The Johns Hopkins Hospital Reports. Vol. III, Nos. 7, 8, 9. Report in Gynecology, II. Baltimore: The Johns Hopkins Press. 1894.

Veneral Memoranda, A Manual for the Student and Practitioner. By P. A. Morrow, A.M., M.D. New York: William Wood & Co. 1894.

Transactions of the American Association of Obstetricians and Gynecologists, Vol. VI, for the Year 1893. Philadelphia: Wm. J. Dornan. 1894.

The Modern Climatic Treatment of Invalids with Pulmonary Consumption in Southern California. By P. C. Remondino, M.D. Detroit: George S. Davis. 1893.

Announcement and Catalogue of the National Medical College, Medical Department of the Columbian University, Washington, D. C., for the Seventy-second Session. 1893-1894.

The Necessity of Special Institutions for the Consumptive Poor; The First Step Toward the Complete Eradication of Tuberculosis. By H. Longstreet Taylor, A.M., M.D., St. Paul. Reprint. 1893.

How to Use the Forceps, with an Introductory Account of the Female Pelvis and of the Mechanism of Delivery. By Henry G. Landis, A.M., M.D. Revised and enlarged by Charles H. Bushong, M.D. Illustrated. New York: E. B. Treat. 1894.

Antibiographical Sketches and Personal Recollections. By Geo. T. Angell, President of the American Humane Education Society, the Massachusetts Society for the Prevention of Cruelty to Animals. Boston: The American Humane Education Society. 1894.

A Practical Treatise on Nervous Exhaustion (Neurasthenia), Its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D. Edited with notes and additions by A. D. Rockwell, A.M., M.D. Third edition, enlarged. New York: E. B. Treat. 1894.

Antiseptics in Midwifery. By Robert Bloxall, M.D., Cantab., M.R.C.P., Lond., Assistant Obstetric Physician to, and Lecturer on Practical Midwifery at the Middlesex Hospital; Formerly Physician to the General Lying-In and Samaritan Free Hospital. London: H. K. Lewis. 1894.

A Synopsis of Clinical Surgery during the Service of Samuel H. Pinkerton, M.D., Surgeon to the Holy Cross Hospital; by Franklin A. Mescham, A.B., M.D., Assistant Surgeon to the Holy Cross Hospital, Salt Lake City, Utah, for the Year 1892. Salt Lake City: Tribune Co. 1893.

The Technique of Post-Mortem Examination. By Ludwig Hektoen, M.D., Pathologist to the Cook County Hospital, Chicago; Professor of Pathologic Anatomy in the College of Physicians and Surgeons of Chicago. With forty-one illustrations. Chicago: The W. T. Keener Co. 1894.

Relation d'une Epidémie de Choléra étude clinique et Expérimentale. Par MM. A. Mairat, Professeur de clinique des maladies mentales et nerveuses, et F. J. Bosc, chef de clinique des maladies mentales et nerveuses à la Faculté de Médecine de Montpellier. Avec four Planches et eleven Tracés dans le Texte. Montpellier: Charles Boehm. 1893.

The Relations of Urinary Conditions to Gynecological Surgery. Report of Two Years' Work in Abdominal Surgery at the Kensington Hospital for Women, Philadelphia. Report of a Year's Work in Minor Gynecological Surgery in the Kensington Hospital for Women, Philadelphia. The Causation of the Diseases of Women. By Charles P. Noble, M.D., Philadelphia. Reprints. 1893.

A Clinical Text-book of Medical Diagnosis for Physicians and Students, Based on the most Recent Methods of Examination. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg. Authorized translation with additions by Francis H. Stuart, A.M., M.D. Third revised edition with one hundred and seventy-eight illustrations, many of which are in colors. Philadelphia: W. B. Saunders. 1894.

Dissections Illustrated; A Graphic Hand-book for Students of Human Anatomy. By C. Gordon Brodie, F.R.S., Senior Demonstrator of Anatomy, Middlesex Hospital Medical School; Assistant Surgeon, Northwest London Hospital. With plates drawn and lithographed by Percy Higley. In four parts. Part I. The Upper Limb. With seventeen colored plates two-thirds natural size. Part II. The Lower Limb. With twenty colored plates two-thirds natural size and six diagrams. London and New York: Whittaker & Co. 1894.

Original Articles.

RECENT OBSERVATIONS ON THE FUNCTIONS OF THE THYROID GLAND; AND THE RELATION OF ITS ENLARGEMENT TO GRAVES'S DISEASE; ALSO REMARKS ON THE THERAPEUTIC USE OF SHEEP'S THYROID AND OF OTHER ORGANIC EXTRACTS.¹

BY JAMES J. PUTNAM, M.D.,

Professor of Diseases of the Nervous System, Harvard Medical School.

THE object of this paper is to call attention to the present state of our knowledge as to some of the functions of the thyroid gland, and certain disturbances of nutrition due to its atrophy; and as to the relation of goitre to the nervous symptoms met with in Graves's disease and analogous states. I shall also speak of the therapeutic action of thyroid extracts in conditions other than myxœdema, and as to the use of some other organic extracts as therapeutic agents.

The dramatic history of the discovery of the relation of thyroid disease to myxœdema, cachexia strumiprivi, cretinism, and the so-called foetal rickets, is now, in its broad outlines, familiar to every physician, so thoroughly has public attention been aroused by the developments of the past few years. As long ago as 1856, Schiff had noticed the fatal effect of thyroidectomy in dogs; and even earlier than this Sir Astley Cooper and one or two other physiologists had made a few experiments in the same line, with varying results. In 1856 Curling described a few cases of sporadic cretinism as occurring in England; and in 1871 Dr. Hilton Fagge described others, and noted that they were characterized by atrophy of the thyroid. In 1874 Sir William Gull read his paper on "The Cretinoid State in Women"; and two years later, Dr. Ord gave a full description of myxœdema, and christened the symptom complex with its present name. He also remarked on the clinical relationship between these cases and those which had been described by Curling and Fagge, and noted that the atrophy of the thyroid made a pathological bond between them.

In 1884 came the remarkable observations of Reverdin, of Geneva, and Kocher, of Berne, who found that the thyroidectomy with which their experience in the goitrous districts of Switzerland had made them familiar, was often followed by a strange cachexia. Kocher at first thought this to be due to laryngeal asphyxia, but Reverdin a few months later recognized it as essentially identical with myxœdema. The flood-gates of physiological research were then opened, and a mass of observations began to pour in, which I have no space even to summarize.² Dr. Felix Semon, recognizing the extreme interest of the new discoveries, at once proposed the appointment of a commission of inquiry from the Clinical Society of London, the report of whose labors, finally published as a separate volume in 1888, will always be referred to as a treasure-house of facts upon this subject.

Even before the publication of this report, came the scarcely less valuable review by our own colleagues, Drs. Hun and Prudden, based on one hundred and fifty cases, and giving the details of two thorough and important autopsies. Finally, in the winter of 1891-

1892, Mr. Horsley, of London, whose name is identified with the best original research with regard to this matter, published in Virchow's *Denkschrift* and in the *British Medical Journal* (January, 1892), a comprehensive and masterly analysis of all the facts which were at our disposal up to that time, relating to the physiology of the thyroid.

Most of Horsley's conclusions have been confirmed by subsequent research; and it is now accepted by every one that the thyroid is an organ of immense importance for nutrition. A few of his views will, however, now bear revision; and a few important discoveries are to be added.

The history of the therapeutics of myxœdema was sketched anew by Dr. F. C. Shattuck at a recent meeting of the Medical Improvement Society; and I have nothing to add to his interesting remarks except to call attention to the fact that many cases of cretinism have been greatly benefited by thyroid feeding, even those where the disease had existed up to adult life. Two or three of these cases have been under the care of Dr. Osler,³ of Baltimore, to whom we also owe an investigation into the frequency of sporadic cretinism in America, showing that it is a disease of rare occurrence among us.

It is probable that the thyroid is not, as Horsley thought it was, a hæmopoietic organ of real significance (Gibson⁴ and others, and among recent observers, De Quervain⁵).

It is practically certain that the functions of the thyroid are not related to those of the spleen (De Quervain⁶). Later observations have indeed made it more and more probable that it is not safe to regard secondary enlargement of an organ following thyroidectomy as a sign of compensatory activity. This is especially important as regards the pituitary body, since this is probably or possibly related to the thyroid in function. It does frequently enlarge after removal of the thyroid and so does the thyroid sometimes enlarge after removal of the pituitary body; but Vassale and Sacchi,⁷ who have been most successful experimenters with regard to the pituitary body, do not believe that the enlargement or the increase of colloid which accompanies it, necessarily means an increase of functional activity.

The interesting experiments by Breisacher [v. Horsley] with regard to the action of animal food in increasing the cachexia from removal of the thyroid have been confirmed, with slight modifications, by De Quervain,⁸ in a very recent research.

This latter observer was unable to confirm the statement of Rogowitsch, Capobianco, and others⁹ that constant demonstrable changes occur in the central nervous system after thyroidectomy.

It is not impossible that a repetition of the fatigue experiments of Professor Hodge, of Clarke University, would show that anatomical changes could be more easily induced in animals suffering from cachexia than in normal animals, and that, for this reason, anatomical changes would sometimes be present which at other times were not found. Pisenti¹⁰ has recently observed

¹ Transactions of the Association of American Physicians, 1893.² British Medical Journal, 1893, i, p. 14.³ Virchow's Archiv, 1893, Bd. 133, Heft 3.⁴ See also Gley and other authors cited by him in the Arch. de Phys. n. et p., 1894, p. 267.⁵ Arch. Ital. de Biol., 1893, t. xviii, p. 385.⁶ Virchow's Archiv, 1893, Bd. 133, Heft 3.⁷ See a paper by the writer, on cases of myxœdema, etc., in the American Journal of Medical Sciences for September, 1893.⁸ Cited by Gley, Arch. de Phys. n. et p., 1894, p. 187.¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society at the meeting, December 20th.² See a review, with original observations, by Dr. F. P. Kinnicutt, New York Medical Record, xlv, p. 449.

the formation of small cavities, apparently of vascular origin, in the spinal cord of dogs who had survived thyroidectomy for a number of months.

The thyroid gland is found in all vertebrate animals.¹¹ It is formed by an invagination of the pharyngeal wall, and is believed by most embryologists to serve as a digestive gland, even in the lowest animals where it exists. I mention this point because a recent writer¹² has proposed the view that its functions are, in a broad sense, respiratory, and that this is indicated by its anatomical relations to the branchial clefts. It is supposed by him that its secretion in some way assists the oxygenation of the tissues. I am not able to say whether there is any real foundation for this theory or not, but Poehl¹³ who has for several years been studying the chemistry and physiology of spermin, finds that this, too, has a powerful influence on oxidation, so that it is a constituent, not only of Brown-Séquard's testicular emulsion, but also of many glands and organs, and among them the thyroid.

The gland shows itself at an early period in the human embryo and, according to Horsley, it probably begins its secretory functions by the sixth or seventh month of foetal life. It is not known upon what principle the efficiency of the secretion depends; and the fact that it remains active after it has passed through the walls of the stomach, as well as after precipitation by alcohol, has not as yet cleared up the mystery, though it indicates that the active principle is a sort of ferment. The adult gland is made up of spaces containing colloid material and lined with epithelium. It is, however, doubtful whether the colloid is more than a vehicle for some more active agent. Certainly its chemical structure may change somewhat without its efficiency being destroyed. It has been clearly shown that when the gland is injured¹⁴ or undergoes such changes as are seen in Graves's disease and even in phthisis¹⁵ there is a strong tendency to a modification of the gland-structure, with arborescent arrangement of the tissue, higher, cubical epithelium and without colloid.¹⁶ Yet myxœdema does not necessarily or even usually come on under these circumstances.

We cannot say with confidence that the gland thus altered remains in all respects as efficient as before, but even a very small part of an altered goitre is enough to ward off cachexia of serious amount. A number of cases are on record, one of which was observed by myself, where goitre with nervous symptoms passed over into myxœdema. It is a curious fact that the outbreak of the myxœdema, in my case, was attended by an enlargement and hardening of the altered thyroid, and that these peculiarities diminished during improvement, and increased again during a relapse.

Greenfield,¹⁷ who has recently studied the subject, regards this tendency of the gland to change its structure in Graves's disease as an evidence of increased glandular activity in that affection. But in view of

the fact that a very similar, if not exactly the same change occurs as a result of injury and disease (phthisis) the assumption cannot be accepted as certain. The fact that this change occurs after removal of part of the gland (Halstead) suggests that it means increased activity, but in Canizzaro's experiments the gland was injured but not mutilated, yet a similar change occurred.

Another fact, which is important in this same connection, is the following: It was at first thought that rabbits were less susceptible than the carnivorous animals to the bad effects of thyroidectomy; but the researches of Gley showed that their survival after operation was due to the fact that in these animals (and, as it seems, in many others as well), besides the main body of the gland, accessory glands or "glandules" are present which had commonly been overlooked when the main body of the gland was removed. The literature of the "glandules" is already a large one, and I will here refer to only one point concerning them. These glandules have an embryonic structure; and although they grow larger after removal of the thyroid and to some extent seem to ward off the threatening cachexia, yet their structure does not necessarily change to that of the adult gland.¹⁸

If this observation is correct, the statement which has been made that the embryonic nodules found even in the adult human thyroid (Wölfler) develop under certain conditions into a more highly differentiated structure, may need revision.

Although it has been proved that the myxœdematous cachexia does not occur after partial thyroidectomy, provided about one-quarter of the gland is left behind, yet it is not to be assumed that even this incomplete removal of the gland is of indifference as regards the nutrition of the organs and tissues of the body. This is a subject of practical interest, and some important experimental evidence has been brought forward in regard to it since Horsley's paper was written.

It has been found that the preservation of the glandules of Gley, though it usually prevents the worst forms of cachexia, does not prevent the gradual development of a series of changes affecting the bones, the skin, the ovaries, and many other organs, especially if the animals operated on are young (Hofmeister,¹⁹ De Quervain). Gley and Rochon-Duvigneaud²⁰ have recently studied with care a series of changes occurring in the eye, under these same conditions. The practical question is this, To what extent must the thyroid be mutilated, or atrophied, or diseased before some of the nutritive effects due to lack of its influence begin to make their appearance? A partial answer to this question is perhaps furnished by the fact that there are disturbances in nutrition, not identical with myxœdema but presenting one or another symptom analogous to those met with in that disease, for which thyroid treatment seems to be useful. It is needless to say that this reasoning should be used only with caution, and that no positive conclusions can be drawn as to the real value of these preparations, either as means of treatment or as pointing to a deficiency of the normal thyroid secretion.

The first person to use the thyroid of animals for other affections than myxœdema, so far as I know, was Dr. Barron of Liverpool, who, noting the fact which must have impressed every one, that patients

¹¹ See W. K. Brooks, Johns Hopkins Bulletin, May, 1893.

¹² Andriessen: British Medical Journal, 1893, ii, p. 678.

¹³ Berl. Kl. W. schr. 1893, No. 36.

¹⁴ Halstead and Welch: Discussion on Myxœdema, Transactions Association of American Physicians, 1893.

Canizzaro: Deutsche Med. Woch., 1892, p. 184.

¹⁵ Defaucamburge, cited by Horsley, loc. cit.

¹⁶ Greenfield (British Medical Journal, December 9, 1893) says that the secretion in exophthalmic goitre sometimes becomes mucoid in character. He assumes that the disappearance of the colloid is due to more active absorption accompanying active secretion.

Putnam: The Treatment of Graves's Disease by Thyroidectomy, Journal of Nervous and Mental Diseases, December, 1892.

¹⁷ Greenfield: British Medical Journal, December 9, 1893. See also Stewart and Gibson: British Medical Journal, 1894, ii, p. 676.

¹⁸ See discussion between Gley and Mousseu, Comptes Rendus, Société de Biologie, 1893.

¹⁹ Fortschritte der Med., 1892, p. 81.

²⁰ Arch. de Phys. n. et p., 1894, p. 101.

recovering from myxœdema frequently lose weight with extreme rapidity, the loss going even beyond the limit of health in some cases, suggested the employment of thyroids in ordinary obesity. I am not aware whether he has continued his investigations or not, but in a private letter, received in May, 1893, he stated that he had used the treatment in five cases, and in three of them with marked effect.

Acting on this suggestion, I have tried the same treatment in several cases during the past year, with the following results: One patient lost 33 pounds in three months, falling from 270 to 237, but here the influence of the treatment seemed to cease. When it was suspended for a month he regained seven pounds, which he again lost on resuming the treatment, but I have not been able to reduce his weight below 237 pounds even by giving fifteen grains of the thyroid daily. No change was made in his diet or habits. His general health showed a marked gain during the thyroid treatment.

A female patient, treated by Dr. Coggeshall, at the Boston Dispensary, lost 47 pounds in four months.

On the other hand, a female patient of my brother, Dr. C. P. Putnam, who weighed 240 pounds at the beginning of the treatment, after losing five pounds the first week, seemed to be no longer affected; and I have had three or four other patients in whom only a temporary loss of weight (up to fourteen pounds in one case), or none at all, has occurred. Possibly, larger doses might have had more effect.

It seems clear from the many experiments which have now been tried, that healthy persons are not so easily affected in an injurious way by the thyroid treatment, though certain symptoms, especially an increase in the pulse-rate, occur with considerable regularity.²¹ It would seem that we do not yet know the conditions which make one person a suitable subject for this treatment and another not so. It will be interesting if it turns out that the loss of weight, even when it occurs, cannot be made to go on indefinitely.

Another therapeutic use of thyroid preparations is in the treatment of diseases of the skin, especially in psoriasis, eczema, and xeroderma. The first of these cases was brought forward by Dr. Byrom Bramwell at the annual meeting of the British Medical Association, August, 1893;²² and the photographs which he there showed were very impressive. Unfortunately, one of these cases afterwards relapsed, and not all the more recent observers have been equally successful, even in their primary results. Dr. Hartley²³ obtained favorable effects, and Dr. Arthur T. Davis²⁴ likewise, while Talfourd Jones²⁵ experimented on a case of psoriasis, with the apparent result of making the disease spread. Lesley Phillips²⁶ obtained improvement in a case of xeroderma but none in three cases of psoriasis and one of eczema. It may turn out that the remedy is useful only in a certain class of these cases, or that it acts indirectly by exerting a psychical influence.

The history of therapeutics shows that new remedies sometimes have a mysteriously good effect. It is highly probable that these effects do not occur through mere coincidence, and are not wholly to be explained

by the assumption that the most favorable results are the first to be made public. The researches of the past few years have taught us that psychical influences can be counted upon to affect the nutrition to a degree formerly not dreamed of, and the effects of the new remedies must be studied anew from this standpoint. It is noteworthy that eczema has been favorably influenced by hypnotism pure and simple, and that good results have followed injections of testicular fluid in eczema, leucoderma, ichthyosis.²⁷ Eccles²⁸ has used spermin in similar cases with favorable effects.

Finally, Vermehren, of Copenhagen, has made an interesting series of experiments with thyroid preparation, in various conditions of impaired nutrition, with the special view of testing their action on some of the changes of old age.²⁹ He first treated three cases of myxœdema with thyroids, and gave also measured quantities of food, and followed the urea excretion. This increased in the course of the first five days in all three cases, finally reaching twice or three times the amount noted for the period before the experiments were begun. In one case it then remained at the maximal point during the continuance of the treatment, so long as the experiments lasted. In the other two cases it fell rapidly, after the first rise, but in one of these it rose again at a later time. A small part of this increased excretion of urea was found to be probably referable to an increased absorption from the intestine. The patients also lost fat largely, but the rate of loss was not estimated.

The non-myxœdematous patients experimented on were: (1) A boy of seven years, with fracture of the tibia; (2) a girl of seven, greatly emaciated and perhaps infected with tuberculosis; (3) a woman of twenty-eight, with chlorosis and gastric catarrh; (4) a man of fifty-two, but very old for his years, with chronic alcoholism; (5) a man of sixty, also old for his years, with chronic bronchitis; (6) a man of sixty-two, with varicose ulceration of the leg.

The study of the urinary excretion seemed to the author to warrant the conclusion that in the cases of the young persons the only positive effect of the thyroid treatment was a moderate diuresis, while with the elderly patients changes occurred like those seen in myxœdema, though to a less degree. It is obvious that more experiments are needed before this conclusion can be accepted as of general significance; but it is certain that slight degrees of myxœdema occurring in the period of involution are liable to be overlooked. I have recently observed and shown a patient³⁰ whose case was perfectly clear on close study, but whose appearance alone would not have attracted notice as abnormal. The case of an elderly gentleman recently described by Dr. F. C. Shattuck, is important in this connection, and not less so for illustrating the liability to the persistence of the ill-effects of thyroid medication, — when such effects occur at all — long after the treatment has been stopped.

THERAPEUTIC ACTION OF OTHER ORGANIC EXTRACTS.

It was impossible that the wonderful discoveries with regard to the effects of thyroid extracts in myx-

²¹ Monnet: *Journal of Cutaneous and Genito-Urinary Diseases*, vol. ix, 1893.

²² *British Medical Journal*, 1893, vol. ii, 474.

²³ *Stoffwechseluntersuchungen nach Behandlung mit Glandula Thyroidea an Individuen mit u. ohne Myxœdema*, Deutsche Med. Woch., 1894. See also, in this connection, Ord and White, *British Medical Journal*, July 29 and December 9, 1893.

²⁴ *Boston Medical and Surgical Journal (Society for Medical Improvement)*, 1894.

²⁵ See, among other papers, Greenfield's Bradshaw Lecture, *British Medical Journal*, December 9, 1893.

²⁶ *British Medical Journal*.

²⁷ *Ibid.*, 1894, vol. ii, p. 761.

²⁸ *Ibid.*, p. 474.

²⁹ *Ibid.*, 1894, ii.

³⁰ *Ibid.*, November, 1893.

œdema should have failed to renew the interest in the use of the other organic extracts (of testicle, brain, spinal cord, etc.) suggested by Brown-Séquard and D'Arsonval,³¹ by Babes,³² and by Althaus.³³

The subject is large enough for a whole evening's discussion, and I cannot pretend to do it justice here. The many observers who have obtained good results from these remedies bring forward an astounding and impressive array of facts in support of their view. Poehl³⁴ shows that similar results may be obtained with his *spermin*, a definite compound obtained from the testicles and the ovaries, and from other glands as well, and adduces evidence that a part of these results are due to increased oxidation occurring under special conditions. It is obvious that all these observations are not to be treated with ridicule, and especially not from an *a priori* standpoint.

What one may and must say, however, is this, that the case for testicoline and cerebrine and myeline in neurasthenia and tabes, and the like, rests on a wholly different basis from that of the case for the use of thyroid in myxœdema. It is not as if we were attempting to cure by injections of spermatic fluid a series of clear and invariable results following castration, though this would be a highly interesting and important experiment. It is a much more difficult matter to decide whether the improvement which takes place in various diseases, even diseases characterized by gross structural changes, like locomotor ataxia, is due to the remedy which has been given.

Explain the fact as we may, the value of all but the clearest therapeutic experiments is enormously vitiated by the fact that mental influences which we cannot gauge are capable of profoundly affecting the result. The powerful phantom of suggestion stands behind the physician's chair, unseen both by him and by the patient, and the influence of the unwelcome intruder is often increased by the very efforts that are made to exorcise him. Althaus, the latest experimenter, recognizes this general fact, but thinks that his observations are free from suspicion on account of the intelligence and mental balance of his patients, and because no attempt was made to impress their imagination. But, the very use of this reasoning indicates a failure to grasp the true significance of the discoveries of the past few years as regards the relation of psychical influences to nutrition. It is not necessary that the patient's imagination should be impressed, in order that results may be produced due to what — for lack of a better name — we must call "suggestion." In hypnotic suggestion the imagination can hardly be said to enter as a factor at all; and even in the many forms of waking suggestion, there is often no conscious stimulation of the imagination. It is, of course, not always easy to say why one drug or treatment should have a markedly greater effect than another; but two causes suggest themselves as often effective. One is the influence of the physician's own feeling of hope or interest, which he may try in vain to conceal,³⁵ and by which the patient may easily be impressed without being himself aware of the fact; the other is the influence of an interest previously stored in the patient's

mind by hearing or reading of the remedy or the method, but perhaps wholly forgotten so far as conscious memory is concerned. The phenomena of "crystal vision," and a host of kindred facts show how potent such "forgotten" cerebral impressions may continue to be. Within certain limits these influences would be all the more active if the patient was intelligent and a person of wide reading and quick instincts of observation.

The admissibility, to say the least, of this explanation of the action of injections of organic extracts is shown by the success which has attended the substitution, under certain precautions, of inert fluids for the testicular or nerve extracts. A large number of control experiments of this sort have been made by other observers,³⁶ and one or two by myself.

One general fact is noteworthy in connection with this branch of the subject, and that is that cures of tabes or locomotor ataxia are perhaps more numerous than any others except neurasthenia. It is, now, well known — in spite of Charcot's "*Quand on guérira le tabes it fera chaud*"³⁷ — that amelioration of some of the symptoms of locomotor ataxia has been brought about, here and there, by several different remedies, such as suspension, injections of phosphate of sodium, and by hypnotism (Moll) as well as by the organic extracts. Moreover, it was noticed long ago, by Westphal and his colleagues, that in cases when the lesions of tabes were combined with those of cerebral degeneration, the ataxia of motion was apt to be much less prominent than where the mental condition was sound. Finally, it is well known that the symptom of pain is pre-eminently susceptible to hypnotic and to waking suggestion; and that persons in a state of somnambulism exhibit an unusual fineness of muscular sense, or sense of position.

It is admissible, I think (though, of course, not obligatory), to read the significance of these facts as follows: that patients with locomotor ataxia are better subjects for psychical treatment than patients with many other analogous forms of disease, because (1) their pain is susceptible of relief in this way, and (2) the aggravation of their ataxia coming from misdirected conscious efforts can be relieved by influences which shunt out the consciousness of their disability in a measure. Perhaps the relief of these symptoms tends also towards a real nutritional improvement in the nerve-centres. Certainly, the reverse is often true, namely, that organic lesions are unfavorably affected by the influence of the symptoms to which they give rise.

Locomotor ataxia seems, again, to be one of those affections where the symptoms may subside in spite of the persistence of the lesions, provided (probably) that the disease is not actually progressing. The important case, with autopsy, by F. Schultze³⁸ published in 1882, affords strong evidence for this view.

My own experience with the testicular and cerebral extracts extended over about a year, during which time I used the injections in a good many cases, but only in nine or ten with a persistence to justify a use of them for clinical inferences. These cases comprise three of locomotor ataxia, and six of what I may call, with sufficient accuracy, neurasthenia. Besides these

³¹ Arch. Physiol. norm. et path., for the past three years; Comptes Rendus Soc. de Biol.; British Medical Journal, June, 1893, etc.

³² Constantin Paul, Soc. de Thérapeutique, Session of February 24, 1892.

³³ Lancet, December 2, 1893.

³⁴ Berl. klin. Woch., 1891 and 1893.

³⁵ The observations on "muscle-reading" should be borne in mind in this connection.

³⁶ Massalongo: Le Iniezioni di Liquidi Testic. di Brown-Séquard, etc., un Nuovo Capitolo di Terapeutica Suggestiva. Riforma Med., February, 1893.

³⁷ Stockwell: Medical News, August 26, 1893.

³⁸ Quoted by Althaus, loc. cit.

³⁹ Zur Frage v.d. Heilbarkeit der Tabes, Arch. für Psych. u. Neurol., vol. xii, p. 233.

I have the notes of the treatment of a case of chronic myelitis which Dr. Coggeshall kindly allows me to report with the rest. I have also, as a control experiment, treated, for about a month, a case of locomotor ataxia by the injection of a simple mixture of glycerine and water. During part of the time I used testicular fluid obtained from Paris through the kindness of Dr. Brown-Séquard, but the greater part of the extracts were made at the Pasteur Institute of New York. The habitual dose was about two or three grammes. In their most recent publications Brown-Séquard and D'Arsonval advocate a dose larger than this.

The summary of the results of my own experience is as follows: In one of the tabetic cases an apparent improvement was shown, not only in a most gratifying general gain (by relief from pains and increase in strength), but also by the apparent cure of one of the gastric crises. The subsequent history of this patient is, however, very significant. At a later period injections of glycerine and water seemed, also, to help him very much, but after this even testiculine failed to prevent a rapid prostration. Another tabetic patient who was treated with testiculine for about a year, with gain as regards relief of pain and general sense of well-being, was attacked with tubercular laryngitis towards the end of this period, and shortly afterward died. This is noteworthy because Dr. Brown-Séquard has claimed that tuberculosis also is favorably influenced by the remedy. The third patient thought his pain relieved, but there was no marked or permanent improvement in the course of two or three months of treatment.

In Dr. Coggeshall's case of chronic myelitis, the patient received three injections of three to four grammes each, of testiculine, every week, and at the end of seven weeks had gained greatly in every respect. In this case there was a history of syphilitic infection fifteen years before, and the final symptoms were of nine years' duration. Under the injections the improvement began at the end of two weeks. After five weeks of treatment there was a marked gain in power of muscular endurance, a gain of weight of four pounds, an increase of half an inch in the girth of the calves, and of one inch in the girth of the thighs. The grasp, as measured by the dynamometer, increased from 60 to 110. Unfortunately, even while the treatment was still in progress, the patient began to relapse, and had soon gone back nearly or quite to his earlier state.

As an offset to these cases, I will briefly report the case of *tabes* treated by injections of glycerine and water. The patient was a married woman about thirty years old, and there was reason to think that she had been inoculated with syphilis by her husband. The tabetic symptoms, which were of several years' standing, consisted in severe characteristic pains; ataxia of both arms and legs; Argyle-Robertson pupils, with irregularity in outline; loss of the knee-jerk; and impairment of control of the bladder. I had intended to treat her with testicular fluid, and gave one injection for that purpose. At the next visit, however, happening to be out of the fluid, and not wishing to disappoint her, I gave an injection of glycerine and water. At the next visit she was better, and so I thought I would continue the glycerine and water, *experimenti causa*. This is now two months ago, and she has continued steadily to improve in most respects. The ataxia of the hands is no better, but the gait has improved so much that, whereas at first she had to bring

a companion with her, she now comes alone. The pains, also, have left her, and in her general health and feeling there is a distinct gain.²⁰

Of the six neurasthenic patients who remained under treatment long enough to make their histories of value, three were men, three women.

Of the men, one was a gentleman past middle life, eminent for scientific training and powers of observation, who had been for some little time in a nervously debilitated condition, owing to stress of work and other causes. The injections were begun by Brown-Séquard, and continued for a time by me, eventually by himself. The treatment was marked by steady improvement, and ended in complete recovery.

The second case was that of a typically neurasthenic patient, an intelligent physician, rather below middle life, and of good nutrition. The symptoms consisted mainly in an incapacity for application without great mental effort and distress, so that steady work, especially of a literary kind, was well-nigh impossible. Temporary improvement of a very marked sort occurred during the first week of the treatment, and recurred to some extent when the treatment was resumed after an interval of cessation. In the end, however, in spite of thorough and persistent efforts, no permanent benefit was obtained.

With both of these cases one interesting symptom showed itself a few times, when the treatment was first begun, namely, a tendency to erections on the night following the injections. This has been noted also by other observers, but is not regarded as due to the specific character of the fluid, and does not, it would seem, imply that the treatment is especially effective against impotence. In one case of this sort, of purely neurasthenic character, a few injections had no effect.

The third case was that of a young man in a typically neurasthenic state, with morbid fears and marked loss of endurance, due, apparently, to sunstroke. The improvement was steady, but as it had begun before the injections were used, under the influence of encouragement, electricity, etc., and continued after the cessation of the injections at the same rate as before, I did not feel that a large share of the result was to be ascribed to them.

The first of the female cases was that of a young girl with infrequent attacks of epilepsy, and great debility. The improvement during the use of the injections was very great, as regards the debility. The fits were too infrequent to warrant conclusions about them.

The second case was that of a lady past middle life, in a condition of slight mental deterioration of unknown origin. The use of the injections, which were faithfully given for many weeks, afforded her encouragement, but brought no real improvement.

The third patient was a woman with mild hysteria, or neurasthenia with hysteroid symptoms of sensory character. Not many injections were given, but after each one she felt distinctly better. In this case the gain was undoubted, but a similar gain and one equally great followed each of many applications of static electricity, and I was inclined to attribute it in both cases to the encouragement attendant on systematic treatment.

I do not maintain that these few observations are in the least conclusive in either direction; but while it is

²⁰ Some months have passed since this statement was written, but I have not seen the patient this winter, and do not know her later history.

true that all which has been claimed for the organic extracts may have been claimed with justice, yet it should not be forgotten that the claims of hypnotism in similar lines are equally far-reaching, and that what hypnotic suggestion can accomplish it is also possible for waking suggestion to accomplish, under sufficiently favorable conditions.

I will now ask your attention to the consideration of another class of affections associated with diseases of the thyroid, those namely, of which Graves's disease may be taken as an extreme type.

This subject is not yet ripe enough for definite conclusions; and a discussion of the points involved, to be adequate, would necessarily be long. I shall therefore content myself with referring to a few prominent considerations.

In the first place, What is the probable relationship of goitre to the other symptoms of Graves's disease? The following answers, no one of which seem to me wholly satisfactory, have been offered in reply to this question:

(a) Graves's disease is made up of a collection of conditions, part of which are due to the irritation of nerves ramifying in the enlarged thyroid or lying near it, while part are due to an altered thyroid secretion, which acts as a poison. The cardiac symptoms may also be in part explained by disturbance of respiration, as in ordinary goitre.

(b) The whole symptom-complex of Graves's disease is of toxic origin, and due, directly or indirectly, to an increased amount of thyroid secretion or an alteration of its quality.

(c) Thyroid enlargement has no causal relation to the other symptoms of Graves's disease, but like them is due to a disturbance of the nervous system, the exact seat of which is unknown, but which probably consists mainly in a disturbance of some of the functions of the medulla-oblongata.

(d) Finally, the enlargement of the thyroid may be partly a cause, partly a symptom of the Graves's disease complex.

Without attempting to take a positive position in favor of either of these views I will call your attention to a few salient facts.

(1) Quite a large number of cases have now been published in which the partial removal of the enlarged thyroid has led to great improvement and even cure of Graves's disease. I have recently collected fifty-one cases of this sort, in all but a few of which, substantial improvement was obtained by operation. Since I made my collection still others have been reported.⁴⁰ At the same time, the results have not been uniformly good. A case which I have carefully followed was operated on by Dr. J. C. Warren nearly a year ago, and of late even the remnant of the thyroid has nearly disappeared. Nevertheless, the improvement in the patient's condition, though satisfactory in some respects, has not been marked by any permanent change in the exophthalmus or the tachycardia.

(2) Although typical Graves's disease is not common in goitrous districts, yet it is common for patients with ordinary goitre to suffer from some of the symptoms of Graves's disease, especially dyspnoea, palpitation and dysphagia. (Mueller,⁴¹ Maude, Wette,⁴²

Schranz,⁴³ etc.) It is in fact for these symptoms that patients with goitre usually present themselves for operation, and it is not difficult to give a fairly satisfactory explanation (Wette) of the way in which the enlargement of the thyroid might lead to them. The following conditions are often met with: (a) Patients with large thyroids, without other symptoms of any kind; (b) patients with large thyroids and symptoms referable to the respiration and pulse. Occasionally slowing of the pulse is seen (Wette); (c) patients with these symptoms, and in addition, perhaps, exophthalmus and some general nervous disturbance; (d) the same, with the addition and other disturbances frequently met with in connection with Graves's disease.

(3) Some of the symptoms of Graves's disease are occasionally excited by some cause apparently wholly independent of the thyroid. This is true, for example, of exophthalmus, which seems to be sometimes due to disease in the nasal cavity and to sympathetic irritation.

(4) Graves's disease sometimes comes on with great rapidity under emotional excitement, so rapidly that it hardly seems possible that the thyroid secretion should have become increased, although it might have become altered in quality.

(5) There is no good reason for characterizing Graves's disease as a cachexia.

(6) The Graves's disease complex strongly suggests the symptoms met with in conditions of extreme excitement, as in fear or in anger, that is, it occurs as a quasi-physiological complex.

(7) Operations on goitres are sometimes followed by sudden death or by extreme disturbance of the heart and respiration; and no satisfactory explanation for this has yet been given, though several of great interest and importance have been suggested. One that has not been suggested, so far as I know, and which may be worth considering is, that if a large amount of thyroid secretion is poured out from the cut surface of the gland into an open wound it must be rapidly absorbed. Against this view, however, is the fact that these serious symptoms do not always occur.

(8) Improvement may be brought about in cases of Graves's disease by various influences, both general and reflex, tending to quiet a disturbed vascular excitement of the gland or of the heart.

(9) The symptoms of Graves's disease bear a certain resemblance to the nervous symptoms of the first stage of cachexia strumipriva. But this resemblance is not a close one, nor is the contrast which has been suggested as between myxœdema and Graves's disease, more than superficial.

(10) Although the histological characters of the enlarged gland in Graves's disease are altered, and the secretion of colloid is apparently deficient, yet the removal of the greater part of such a gland does not lead to myxœdema.

(11) On the other hand, myxœdema occasionally follows Graves's disease in the same patient, or the two diseases are seen in different members of the same family; and in the same family ordinary goitre may be met with.

We have no right to assume that goitre was the original cause of the symptoms which are cured through its removal.

The recent view that the symptoms of Graves's

⁴⁰ Mainly collected by Möbius (Schmidt's Jahrb., 1893). See also Maude: Lancet, 1893, II; Freiberg: Medical News, August 26, 1893.

⁴¹ Deutsches Arch. für klin. Med., 1893.

⁴² Arch. für klin. Chir., 1892, vol. 44.

⁴³ Ibid., 1886, vol. 24.

disease are due to excess of thyroid secretion, although supported by some evidence, has not been fully established, and is strongly controverted by a recent case in which the disease was cured by sheep thyroid taken by the stomach.⁴⁴

THREE CASES OF SALPINGITIS OF UNUSUAL EXTENT.¹

BY MAURICE H. RICHARDSON, M.D.

- I. DOUBLE PYO-SALPINX OF TUBERCULAR ORIGIN; REMOVAL; RECOVERY.
- II. DOUBLE PYO-SALPINX, PROBABLY TUBERCULAR; REMOVAL; LOCAL PERITONITIS; RECOVERY.
- III. DOUBLE PYO-SALPINX OF SEPTIC ORIGIN; REMOVAL; DEATH.

THE following cases are unusual because of the extraordinary size of the tubes. They are interesting also from their etiology. In the first case the question of diagnosis was a conspicuous feature; the tumors, from their size and apparent solidity, with their intimate connection with the uterus, having deceived every one who examined them. Apparently the growth was a lobulated fibroid. The diagnosis seemed so clear that a sound was not put into the uterus; yet it does not follow that because a uterine sound does not enter an abnormal distance that the uterus is not enlarged. In the second case the diagnosis was easy. The source of the trouble, however, was not so clear. It was impossible to exclude a tubercular element in this case. The possibility of an infection through the uterus was also considered. Whatever may have been the cause in this instance, the great size of the tubes, their outline and their situation made the case one of unusual interest. In the third case a history of a direct infection through the vagina and uterus made the etiology more positive. The methods used and their results justify certain conclusions of value to me in the future management of similar cases.

CASE I. N. Q., aged twenty-four, single. Entered the Massachusetts General Hospital July 5, 1892. There was a family history of consumption. The patient has never been sick. One year ago she began to have pain in the back, which of late has been less severe than at the first. For some time she has noticed a swelling in the lower abdomen on the right side. Of late the pains have been referred to the thighs and have been sharp and shooting. Catamenia regular until last month, when they were absent. She had always had dysmenorrhœa. There has been a slight vaginal discharge. She has lost thirty pounds in weight in the last year. Her appetite is good. Urine normal. She is not confined to the bed.

Below the umbilicus the abdomen was enlarged, and contained a mass about the size of a six months' fetus, with two prominent tumors. The mass of both tumors was somewhat to the right of the median line and was slightly tender and movable. The uterus moved with the movements of the tumor. The uterine sound was not passed. A large mass could be felt in the posterior cul-de-sac. She was examined by several of the staff, and the diagnosis of a uterine fibroid was made. This case was carefully studied until the 15th of July, when a median laparotomy was performed. As soon as the abdominal pressure was

relieved by delivery of the tumors, both stood upright in the wound, presenting the very extraordinary appearance of two convoluted masses, perfectly symmetrical, attached one to each cornu of the uterus, like enormous spiral horns. Both tumors extended deep into the pelvis and were attached by adhesions so easily separated that the continuity of the tubal wall was not broken. The peritoneum was studded with miliary tubercles; — tubercular salpingitis was evident. The patient made an uninterrupted recovery. A small portion of the omentum was removed for microscopic examination.

Dr. Mallory's report is as follows: Nodules miliary tubercles. The tubes are eighteen and nineteen centimetres in length, circumference twenty-four centimetres each, weight *one and one-half pounds each*. Thin walls filled with thin, greenish-yellow pus; peritoneal surface studded with gray miliary tubercles.

The patient came to the hospital to have this operation performed so that she could get married. I dare say that she has carried out this intention. This case is an extraordinary one from the great size of the tumors, and is interesting from the difficulty met with in diagnosis and from the glaring error made by every one. The necessity for the operation was apparent, even with the incorrect diagnosis of fibroid. The shape of the tumors was characteristic of the large dilatations of the Fallopian tubes. The great lengthening of the tube which accompanies the increase in lumen gives a spiral shape to the tumor. This appearance was well marked in the other cases. As a rule the distal end of the tube becomes rounded and projects into the pelvis, where it becomes adherent. In the present instance the enormous double enlargement was so great that the pelvis could not hold the mass. The tumors were not so deeply attached and firmly adherent as in Cases II and III. Separation was therefore accomplished so easily that no fluid escaped.

CASE II. Massachusetts General Hospital, August 26, 1893. Eunice G., aged twenty-six, married five years ago, has always been well. One miscarriage four years ago. Catamenia have been irregular, several periods having been missed without pregnancy. Four years ago, after being sick in bed with pain in the right side, the doctor lanced an abscess in the vagina. A year later a lump was noticed in the right side of the pelvis which has lasted ever since. Two weeks before entrance, she was taken with chills, fever and great general tenderness.

General condition poor; facies "peritoneal" and anxious. Marked swelling in the lower abdomen over right tube, with increased resistance and ill-defined dulness. Great tenderness at this point; whole abdomen somewhat tender. Constitutional symptoms severe. By vagina a bulging mass was felt on both sides of the uterus, which was firmly fixed in the centre.

The question of supra-pubic operation presented itself. The fluctuating tumor felt by the vagina invited drainage in that direction; but the unsatisfactory results that follow vaginal and rectal drainage in pelvic abscesses; the brilliant recoveries which take place after abdominal section, with the immobility and sharp definition of the tumor that presented in the abdomen, decided me to take the abdominal route.

In the extensive tubal disease found in this case abdominal section is much better than vaginal drainage, in my experience. Recovery is much more rapid and

¹ Read before the Obstetrical Society of Boston, December 9, 1893.

⁴⁴ Owen: British Medical Journal, 1893, II, p. 1211.

complete. Moreover the mortality is no greater, considering the complications that may attend the prolonged convalescence of the latter method, the insufficiency of the drainage at times, and the not infrequent involvement of the bladder. To have seen a few women slowly waste away and die after the failure of rectal and vaginal incisions, to have seen the greatly increased dangers and difficulties of the abdominal operation after the failure of the vaginal, to have watched the progress of intestinal, vesical and other fistulæ — to have seen a few of these deplorable conditions, makes one hesitate in adopting the so-called safe operation of dependent (always septic) drainage. Not that vaginal drainage should never be employed. It can do no harm when an abscess is clearly pointing, for, by the supra-pubic, rectum drainage will have to be established, and probably vaginal also. But in conditions in which complete extirpation of the dilated tubes and their contents is possible, there is no argument of weight in favor of the vaginal, much less the rectal incision.

On the 28th of August a median incision was made, with the patient in the Trendelenberg posture. The abdominal cavity was thoroughly protected from possible extravasations by means of gauze barriers. The right tube was found to be as large as two fists, and everywhere adherent. The whole tumor was freed from its adhesions and delivered from the abdominal wound. The uterine attachment was tied close to the uterus. On the left side, also, a tumor was found — not quite so large as the one in the right. In freeing the adhesions on this side the abscess was ruptured, and at least four ounces of what seemed to be pus escaped. In spite of every precaution, the intestines were somewhat contaminated by this fluid. The tube was delivered and tied near the uterus with silk. The contents of this tumor, like that of the right, seemed to be purulent. It was greenish-yellow and odorless, thick and tenacious. The intestines that presented were carefully wiped with sterile gauze; the abdominal wound was closed without drainage.

The patient's temperature rapidly fell to the normal line, and she improved very much. In the course of a few weeks, however, she began to get hectic. A mass could be felt both by vaginal and by abdominal palpation. I was on the point of incising the posterior cul-de-sac several times. Finally, however, there was an abundant discharge of pus with a small piece of gauze from the rectum. Through this spontaneous opening the finger could be introduced into an abscess cavity situated behind the uterus. The convalescence from this time was steady, and she is now in excellent condition.

The dangers by the intra-abdominal method of treatment in cases of this kind may be very great. Safety to the patient depends upon causes beyond the control of the surgeon, if he selects this route. It is beyond human skill in many cases of this kind — in which the tubes are enormously dilated and presumably adherent, to remove the tumor without rupturing it. Notwithstanding all precautions, the extravasated fluid will contaminate the peritoneum more or less on all sides. In spite of irrigation, of wiping out with gauze, of thorough disinfection — of every thing that we can do in those instances in which the fluid contains the more septic micro-organisms — the dangers of a general and fatal peritonitis are very great. In this case, the abdominal wound was closed. We knew nothing

as to the septic or aseptic qualities of the fluid when the peritoneal cavity was sealed. We were very fortunate, therefore, that there was not a general septic peritonitis and death. The accidental presence of the gauze would have had nothing to do with the sepsis in the absence of a septic element pre-existing in the fluid, for I have often left gauze-padding much longer than this without symptoms. Unless we can demonstrate on the spot, by some of the rapid methods of staining micro-organisms, the absence of these bodies, we have no right at present to close the abdominal wound. We must give the patient the benefit of the doubt, and provide for drainage in every instance. Not that drainage is sure to prevent a general septic infection — it will not do this invariably; but if by means of tubes or of gauze, or of both, the toxic products of germs can be removed as fast as they form, the prospect of recovery is much better.

CASE III. Sarah H., aged forty-five. Boston. Admitted to the hospital October 1, 1893. Menstruation regular, slightly painful, not profuse, for thirteen years. Married twenty-seven years ago. No children. Second marriage four years ago. No children. Pregnant once at nineteen, and some sharp instrument was used to produce abortion. Has never been free from pelvic trouble since. During the last twelve years has had various disorders — pneumonia, congestion of the lungs, nervous prostration, etc. Last summer a tumor was discovered in the left ovarian region. Six weeks before entrance to the hospital, while doing her housework, during her catamenia, pain to which she had been subject off and on for years, became worse than usual, and she had to go to bed. In the course of two days an ulcer broke in the womb, and thick, greenish matter escaped. Has been in bed ever since. There have been severe spells of vomiting, lasting a day at a time. Micturition has been frequent and difficult. Yesterday and to-day has had chills and fever for the first time.

Face pale and pasty; valvular disease of the heart; abdomen very fat, and somewhat tender all over, especially above pubes and to the left, where a round mass about the size of two fists or larger, dull on percussion, could be indistinctly felt. In addition to the tumor on the left, another could be felt less distinctly on the right; both were fluctuating, and seemed unattached to the abdominal wall.

At my first examination (without ether) it seemed to me that the operation would consist simply in incision and drainage, either through the abdominal parietes, to which the tumor on the left seemed then adherent, or through the vagina, or by both routes. As soon as the patient was etherized, however, the unattached condition of the tumor on the left and the presence of another on the right could be clearly demonstrated. I therefore made the median incision, the patient having been prepared for laparotomy. The right tube was enlarged to about the size of two fists, or a little smaller; it was adherent deep in the pelvis, but not attached anteriorly. The adhesions were separated carefully, and the whole mass was delivered without rupture. A ligature was applied close to the uterus; and the whole tumor removed. There was no escape of fluid during this procedure. The left tumor, which was considerably larger than the right, was next isolated, as far as possible, by separating the recent adhesions. The undelivered extremity of the tube, pointing downwards and forwards to the left

of Douglas pouch, was so intimately adherent in the depths of the pelvis, that I found it impossible to separate the mass without rupture. There was a very large escape of foul fluid, apparently pus, which contaminated everything in the vicinity. All the intestines and the lower part of the abdomen were bathed in this fluid, in spite of all efforts, either by the interposition of gauze barriers or by rapid irrigation. The pelvis was cleaned as carefully as possible, by the use of both boiled water and sterile gauze. A small gauze drain was placed in the pelvis, and the incision was closed with silkworm-gut sutures. The operation was a very rapid one, but the amount of shock following was considerable. Her condition, however, which even before the operation was very serious, slowly improved. There was no vomiting.

On the following day there was moderate staining from the drain. The temperature and pulse steadily rose. Salines were given in drachm doses every hour. On Monday, the 9th, the bowels moved freely. Large quantities of gas also were passed. Her condition was very poor, and steadily getting worse. There was no pain in the abdomen — which was distended — and no vomiting. Her general condition was very bad. During the day she gradually failed, and died early on Tuesday morning.

This operation differed in no respect from that in the preceding case, except in that the patient soon showed evidences of septic absorption. Though a general peritonitis did not develop, yet there was sufficient poison in the localized peritonitis that did follow to produce a fatal septicæmia. An examination of the fluid showed the presence of the streptococcus pyogenes, with some of the less virulent micrococci.

This case shows the importance of early operation in some forms of salpingitis. While in the first case the symptoms were in no way so severe as would be expected in tubercular abscess, yet in the second there were more or less serious constitutional disturbances. But even in the second case there were no elements present which were likely to produce serious local or constitutional disturbance. In the third case, on the contrary, there was a mass of fluid likely at any moment to break into the peritoneal cavity, and so virulent in its micro-organisms that death followed in less than three days, through the local infection alone. Her extreme prostration undoubtedly opposed but feeble barriers to the septicæmia, and death in spite of free catharsis was probably due to a very moderate absorption.

It is an interesting question to differentiate these conditions, and it does not seem especially difficult to do so in the later stages. Unfortunately, in delayed cases, the prognosis is much more serious. It does not seem reasonable to allow tumors of the Fallopian tubes to attain such a size as these specimens show — no matter what the cause of the process may be. The operations for the removal of tumors may not be especially hard. They may present, of course, great difficulties; — their removal may even give rise to some of the gravest emergencies in surgical procedures. But the chief danger in the late operation lies in rupture of the dilated tube with unavoidable peritoneal infection. Though in none of the above cases were the adhesions impossible of separation, yet the tumor might have been so intimately attached that enucleation would have been out of the question. Not infrequently the bowel has been torn open in

forcible attempts at separation. In early extirpations, most of the above dangers are avoided.

These cases certainly indicate a much earlier operation in salpingitis than was performed. If we can demonstrate, by bimanual palpation, the existence of tubal inflammation so extensive that there is no reasonable hope of cure, either by natural processes or by drainage through the uterus, then we ought to interfere surgically in every case in which there is no contra-indication in the condition of other viscera. Not only by the experience gained in these cases, but also by that met with in much less extensive forms of salpingitis, am I inclined to favor early interference when the tubes are distinctly diseased. I would not advocate so severe an operation as an abdominal section, however, unless the progress of the disease was distinctly unfavorable; unless the local evidence was marked; and unless, under palliative treatment, there was no distinct progress toward permanent disability. The results in my operations for this disease have all been, almost without exception, very gratifying when recovery has followed. In the third case reported, and in another similar one drained some years ago by abdominal section, death took place. All the others recovered. The number is not great, — probably not over fifteen or twenty. I would not be willing to say that the mortality is nil; still in cases that have not advanced to any great degree of local or general infection, I regard it as so inconsiderable that the outlook — not only for immediate, but for permanent cure — is very gratifying.

The prognosis in uncomplicated cases in which the tubes are not greatly enlarged and can be tied and removed without infecting the peritoneum, is very much like that after removing the appendix in the interval between attacks. The operation is very similar, and the danger of hæmorrhage or infection not unlike.

In all cases of pyo-salpinx, as well as in all cases of suppuration elsewhere in the abdominal cavity, excessive care is necessary in the evacuation of pus, or of what seems to be pus. In many instances the fluid contained in the Fallopian tube is sterile, but it is clearly impossible by the naked eye to tell whether a given fluid is septic or not. Our technique must be so carried out that all contamination shall be avoided as far as possible. In hospital as well as in private practice, it is extremely desirable to have slide preparations examined on the spot by an experienced bacteriologist, while the process of cleansing the abdominal cavity is going on; for the method of treating the wound depends upon the results of such examination. If no pathogenic bacteria can be found by such a method of rapid staining, for example, as that just described in the JOURNAL of December 7th by Mr. Barney, irrigation may be dispensed with and the abdominal wound may safely be closed. If, on the other hand, the streptococcus or other pathogenic micrococci are present, or the fatal colon bacillus, we should make renewed efforts at cleansing and disinfection; we must not, under these circumstances, close the abdominal wound without providing free drainage, by the use of either gauze or a tube, or both.

PHILADELPHIA ADVERTISING. — A Philadelphia firm of truss-makers has sent out a circular to physicians offering commission in the following bold manner: "If you will send us your patients, we will reciprocate with a check by return mail."

A BACTERIOLOGICAL STUDY OF FOUR HUNDRED CASES OF INFLAMMATION OF THE THROAT, OCCURRING IN DIPHTHERIA AND SCARLET FEVER, WITH ESPECIAL REFERENCE TO PATHOGENESIS.¹

BY JOHN LOVETT MORSE, A.M., M.D.

WE owe the first description of diphtheria to Bretonneau. He regarded the presence of a pseudo-membrane in the pharynx and upper air-passages as its characteristic feature. The infectious nature of the disease was first recognized in 1860 by Trousseau, who considered the local manifestations as comparatively unimportant. As the disease became more prevalent, more and more attention was directed to its clinical characteristics, and the presence of a pseudo-membrane in the throat was again regarded as its diagnostic feature. It was noted, however, that the membrane varied in different cases. In some it was removed with difficulty and left a raw, bleeding surface; in others it proved to be a mere exudation, and left an intact surface after its removal. It was also found that a fibrinous exudation, taking the form of a membrane, anatomically indistinguishable from that found in diphtheria, could be produced in a number of ways, as by wounds and irritants of various sorts. This same pseudo-membrane was also found to be produced in other portions of the body by the same irritants. A pseudo-membrane was also noted in scarlet fever, measles and typhoid fever. The discovery of these facts resulted in great confusion and accurate diagnosis was impossible. Every man had his own standard and no one could prove whether he was right or wrong.

Much of the confusion arose from the fact that men failed to recognize that a diphtheritic inflammation is essentially an anatomical process and does not necessarily have any connection with the infectious disease, diphtheria. Any inflammation characterized by a fibrinous exudation forming a membrane on the inflamed surface is a diphtheritic inflammation, however it may be caused. The diphtheritic membrane is due to a combination of necrosis and inflammation with fibrinous exudation. The essential factor is a necrosis of the surface epithelium. This necrotic tissue supplies the fibrin ferment, and fibrin is formed from the serous exudation which comes in contact with the necrotic tissue. The membrane itself is found on microscopical examination to consist almost entirely of fibrin and of necrotic tissue which has undergone fibrinoid metamorphosis. The tissue beneath shows evidence of the most intense inflammation. It is infiltrated with inflammatory exudation, the blood-vessels are dilated and pus cells are found in the vessels and in the tissue. The necrosis is not limited to the surface but extends irregularly into the tissue below, often passing beneath the unchanged epithelial surface. It is here also accompanied by the formation of fibrin, the fibrin in the tissue below often connecting with that on the surface, causing this to adhere more strongly. Confusion has also arisen from the so-called diphtheroid affections of the throat. In these inflammations we may have masses of detritus, consisting of cast-off epithelium, mucus and masses of bacteria, collected on the surface of the mucous membrane and frequently extending

into the follicles. These masses can be removed in more or less adherent flakes. Under the microscope they are often found to be composed almost entirely of mucus, epithelial and pus cells, and bacteria of various forms, which evidently find a favorable culture medium in the collections of mucus and cast-off epithelium. These deposits are sometimes accompanied by marked signs of local inflammation as well as by constitutional disturbance, due to the absorption of chemical products.

The discovery of bacteria and their relation to disease, however, offered a solution for the problem. After years of careful investigation by many observers the bacillus causing the disease was isolated and its pathognomonic character demonstrated. Klebs (1) in 1883 found that a bacillus, always the same morphologically, was constantly present in the pseudo-membrane of cases of epidemic diphtheria. Löffler (2) in 1884 investigated the subject still further and found that this bacillus was pathogenic in certain animals, and produced, on inoculation, a pseudo-membrane on the surface inoculated. The whole subject has been carefully gone over by numerous investigators since that time, notably Löffler, Roux and Yersin (27), Babes (3), Welsh and Abbott (4). Pseudo-membranes, paralyzes and organic lesions, similar to those in man, have been produced in animals by inoculation and a toxine has been isolated, which produces, when inoculated, the same results as the pure culture, with the exception of the pseudo-membrane (5, 6, 7). This toxine is probably due to a ferment produced in the membranes by the bacillus, which is absorbed and forms poisonous albumins and an organic acid in the body (7, 8). Hence we now consider only those pseudo-membranous inflammations as diphtheria, in which this bacillus, known as the Klebs-Löffler, is found. Therefore, no diagnosis can be made, which can be regarded as more than probable, without the bacteriological demonstration of this bacillus.

The Klebs-Löffler bacillus is a small organism not much larger than the tubercle bacillus. Its most striking feature, morphologically, is its variation in form and its irregularity in staining. The ends of the organism are frequently clubbed, sometimes one and sometimes both ends, and in most cases when stained it shows a series of clear spaces along with intensely stained particles. The form and size vary greatly under various circumstances. In different cases it appears in some much larger and more irregular than in others, and in the same preparation great irregularity may be seen. It grows readily on a variety of culture media and most readily on the modified blood serum first introduced by Löffler. When cultivated on potato it is much larger and more irregular in form than when grown on any other medium. The organism is pathogenic for a number of animals, especially for young cats and guinea-pigs. In guinea-pigs the most virulent form of the organism will produce death in from thirty-six to forty-eight hours. Like some other organisms, there is a marked difference in its virulence. While cultures from some cases will always produce death in thirty-six hours, in others death will not take place for several days; and in others, again, the animals may survive the primary inoculation, and afterwards die of paralysis after an interval of three or four days. Again, in still other cases, no results may follow the inoculation (9).

Numerous cases of pseudo-membranous inflamma-

¹ A contribution, under direction of Dr. W. T. Councilman, from the Pathological Department to the forthcoming Medical and Surgical Report of the Boston City Hospital. Awarded one of the Lyman prizes for 1893.

tion of the throat are met with, however, which are due to other bacteria than the Klebs-Löffler bacillus. These cases are absolutely indistinguishable clinically from those due to the action of the Klebs-Löffler bacillus, and may be precisely the same anatomically. As a rule they are associated with streptococci, as is notably the case in scarlet fever and measles. Moreover, the Klebs-Löffler bacillus and the streptococcus are often found together or accompanied by staphylococci and other organisms. A differential diagnosis is only possible by a careful bacteriological examination. The utility of clinical conclusions has been shown by numerous investigators. In 1889, Prudden (10) investigated twenty-four fatal cases which had been diagnosed clinically as diphtheria. In several of these cases scarlet fever and measles were also found. The Klebs-Löffler bacillus was not found in one, but the streptococcus in all but two. Baginsky (11), in one hundred and fifty-four cases diagnosed clinically as diphtheria found the Klebs-Löffler absent in thirty-four. Martin (12), in two hundred suspected cases of diphtheria found no Klebs-Löffler in seventy-four. Park (13), in one hundred and fifty-nine cases of pseudo-membranous inflammation, found the diphtheritic bacillus in only fifty-four. In every one of the remainder streptococci were the most abundant bacteria, and often the only ones. Koplick (14) found the streptococcus alone in eleven cases of clinically pure fibrinous diphtheria. Janson (28), in one hundred cases of pseudo-membranous angina, met with the Klebs-Löffler bacillus in only sixty-three.

As the prognosis, contagiousness, and hence the necessity for isolation, varies greatly with the form of bacteria present, the necessity of an accurate and early diagnosis is evident. This can only be obtained bacteriologically. By the examination of a cover-slip preparation, prepared directly from the throat, the presence of the diphtheritic bacillus may often be demonstrated immediately. This method is fortunately most valuable early in the disease (29) (15). The presence of the bacilli is positive evidence, their absence only negative, and in these cases further examination by means of cultures is necessary. In fact, it is advisable to examine all cases by cultures as well, which requires only twenty-four hours for the determination of the presence of the bacteria.

The main objects of my work have been to determine by the examination of a large number of cases, in which diphtheria had been diagnosed clinically, or at least strongly suspected: (a) the proportion in which the Klebs-Löffler bacillus was present; (b) whether or not, and if so, in what way, the prognosis was altered by its presence; (c) in what way the prognosis was altered by the presence of other organisms in combination with the Klebs-Löffler bacillus; (d) what these organisms were and how often they were found. During the course of my investigations many other points have come up which seem worthy of special note, particularly the results bearing on the length of time which the bacillus remains in the throat and nose after convalescence is established.

The method employed was essentially the same in all cases. Swabs are made by winding absorbent cotton tightly on the end of a piece of stiff wire five inches long. These are put in cotton stoppered test-tubes, and sterilized by dry heat. The swab is rubbed thoroughly over the throat, and put back in the test-tube. In the laboratory the swab is carefully rubbed

over the surface of a slant tube of Löffler's blood serum mixture. A platinum loop is run over the surface of this tube, and then smeared on a second tube; this procedure is repeated on a third tube. The cultures are left in the thermostat at a temperature of 35° C. until the next day and then examined microscopically. The colonies on the third tube are usually discrete enough to admit of a differential diagnosis of the organisms present. The diagnosis has been made, as a rule, on morphological appearances, although in many cases the cultural peculiarities have been investigated and animals inoculated. In one series of twenty-five cases, which will be given in detail later, the various organisms were isolated in pure cultures and accurately differentiated on the various media. The blood serum was prepared according to Löffler's well-known formula, solidified slowly in the dry sterilizer at 75°-80° C., and then sterilized in Arnold steam sterilizer at 100° for one-half hour on three successive days. This method is much simpler than the one in ordinary use, saves all the media, and is entirely satisfactory in every way. The organisms grow as rapidly and as vigorously as on blood serum prepared by the old method. The time and trouble saved in this way is evident. Löffler's methylene blue solution was ordinarily employed in staining. Four hundred cases have been investigated in this routine way. All of them were examined after admission to the diphtheria ward of the City Hospital, or were cases in the scarlet fever ward whose throats were suspicious.

These cases, as a rule, come from the tenement-house districts in the thickly-populated portions of the city, the North End, about Dover Street, and South Boston. A few, however, come from the outlying districts, as Brighton and Roxbury. It is safe to say that a very large portion of them live in improper hygienic surroundings, and are in poor condition to resist so severe a disease as diphtheria. Moreover, many are not brought to the hospital until they are *in extremis*, and die within the first twenty-four hours. The proportion of adults is very small, only seventeen per cent. of the present series being over fifteen. All these factors have an important influence on the statistics and make the percentage of mortality appear far worse than it would in other circumstances.

DIPHTHERIA, SCARLET FEVER.

The presence of the Klebs-Löffler bacillus was demonstrated in two hundred and thirty-nine, that is, in sixty per cent. of all suspicious cases. There were three hundred and one cases in which scarlet fever was not present, not excluding, however, those cases in which it may have occurred earlier or later. Of these, the Klebs-Löffler bacillus was present in two hundred and seventeen, or seventy-two per cent. These results correspond pretty closely to those obtained by other investigators, Baginsky (1) having found the Klebs-Löffler bacillus in one hundred and twenty cases out of one hundred and fifty-four, or seventy-eight per cent.; Martin (12), in one hundred and twenty-six out of two hundred, or sixty-three per cent.; Park (13), in fifty-four out of one hundred and fifty-nine, or thirty-four per cent.; and Janson (28), in sixty-three out of one hundred, or sixty-three per cent.

One hundred and thirty-six of the four hundred cases examined died, giving a general mortality of thirty-four per cent. Of the two hundred and thirty-nine cases containing the Klebs-Löffler bacillus ninety-nine

died, that is, forty-one per cent. Of the one hundred and sixty-one in which it was not present, thirty-seven died, or twenty-three per cent. The general mortality of the three hundred and one cases not complicated with scarlet fever was thirty-six per cent. Eighty-nine of the two hundred and seventeen cases in which the Klebs-Löffler bacillus was present, died, that is, forty-one per cent.; in the eighty-four in which it was absent, twenty-one, or twenty-five per cent. died. Of the remaining ninety-nine cases in which the diagnosis of scarlet fever or scarlet fever and diphtheria was made, twenty-six, or twenty-six per cent. died. The Klebs-Löffler bacillus was demonstrated in twenty-three, ten of which died, or forty-three per cent. Of the seventy-six cases in which it was absent, only sixteen, or twenty-one per cent. died.

Mortality in four hundred cases	34%
" in all cases containing K. L.	41
" in all cases without K. L.	23
" in all cases uncomplicated by scarlet fever	36
" in these cases which contained K. L.	41
" in these cases which did not contain K. L.	25
" in all cases complicated by scarlet fever	36
" in these cases containing K. L.	43
" in these cases not containing K. L.	21

These figures go to prove that the mortality in pseudo-membraneous inflammations of the throat is nearly twice as great in those in which the Klebs-Löffler bacillus is present as it is in those in which it is absent. Somewhat similar results have been obtained by other observers. Park (13) records a mortality of forty-six and one-half per cent. in true diphtheria. Twenty-five per cent. of Janson's (28) series, in which the Klebs-Löffler was found, died, while all the other cases of angina, uncomplicated with scarlet fever, recovered. In Baginsky's (11) series, thirty-eight per cent. of those with Klebs-Löffler died, compared with eleven per cent. of those without. Heubner (15) found a mortality of sixty per cent. in seventy-seven cases of true diphtheria.

Of the sixty-two adults, Klebs-Löffler was present in thirty-eight, absent in twenty-four. The general mortality was nine per cent.; that of those in which the Klebs-Löffler bacillus was present, thirteen per cent.; of those in which it was absent, four per cent.

MEASLES, SCARLET FEVER.

A mild epidemic of measles occurred in the scarlet-fever ward during the course of this investigation. Six cases had measles and scarlet fever together. All recovered, and the Klebs-Löffler bacillus was not found in any. Streptococci were present in five; staphylococci in two, and the diplococcus lanceolatus in three. Four cases of measles with severe throat symptoms, giving rise to the clinical diagnosis of diphtheria, occurred. One contained a few Klebs-Löffler bacilli and many staphylococci and recovered. The others were practically pure cultures of staphylococci, and all died, one, however, of scarlet fever contracted while convalescent. These cases, as far as they go, show that the Klebs-Löffler bacillus is certainly a very rare accompaniment of the throat complications of measles. The literature on this point is very scanty. Hofmann (16) and Escherich (17) claim to have found the pseudo-diphtheritic bacillus in several cases of measles.

TYPHOID FEVER.

Four cases of typhoid fever with throat complica-

tions have been examined, and seem worthy of separate consideration.

L. F., for some time a patient on the surgical side, developed a sore throat. Bacteriological examination showed a few Klebs-Löffler bacilli. She was transferred to the diphtheria ward, where a few days later the diagnosis of typhoid fever was made. She ultimately recovered. A guinea-pig, inoculated with a pure culture of the Klebs-Löffler bacillus obtained from her throat, died.

K. W. entered the hospital after a sickness of a week. The diagnosis of typhoid was made, but she was put in the diphtheria ward because of her throat. Examination showed a few Klebs-Löffler bacilli, many staphylococci, and a few streptococci. Her throat was clear in five days, and she was soon after transferred to a medical ward, where she recovered.

F. D. was ill with typhoid in a private room. A nurse, several days after leaving the scarlet-fever ward, had a sore throat, and was put in the same room over night. On the discovery of the Klebs-Löffler bacillus on the next day she was transferred to the diphtheria ward. Four days later F. D. developed a sore throat with membrane. The presence of the Klebs-Löffler bacillus was demonstrated, and she was also transferred. The next day a typical scarlet-fever rash developed, which was followed by desquamation. Her throat was clean in ten days, and she ultimately recovered.

Isabella N., nineteen, was admitted to the medical wards of the Boston City Hospital on October 27th, at about the middle of the first week of typhoid. She was a large, well-built girl, in very good condition. A faint systolic murmur was noted in the heart at both base and apex. Although her temperature ranged high, she did very well until November 4th, when she became delirious and her pulse more frequent. She slowly lost ground, and on November 11th it was noticed that swallowing was painful. Examination of the throat showed both tonsils and pillars of fauces covered with a dirty-white membrane, which extended all over adjoining parts of soft palate and uvula. The posterior pharyngeal wall was not seen. She was immediately transferred to the diphtheria ward. Cultures from swabs made on this day and the next showed streptococci and staphylococci, but no diphtheria bacilli. Blood-serum tubes made from swabs of November 14th showed almost pure cultures of the Klebs-Löffler bacillus. She was able to take but little nourishment, and remained semi-unconscious and delirious. Her pulse gradually failed, and she died on November 17th. Her throat had begun to clear up during the last two days. The autopsy was performed by Dr. Councilman thirty hours after death.

Body. — Large, well-built, tolerably well-nourished.

Skin. — Generally pale and anæmic. Mucous membranes pale. Posterior surface of body slightly congested. No eruption. Subcutaneous fat medium in amount.

Abdomen. — Moist and peritoneum smooth, save over spleen, where there is a slight fibrinous exudation. Both liver and spleen free from connective-tissue adhesions. Along course of ileum and colon areas of congestion. Diaphragm in usual position. Anterior mediastinal glands slightly enlarged and reddened.

Lungs. — Remarkably free from pigment. Both slightly adherent by old adhesions. The entire posterior part of right lung congested, oedematous, and slightly consolidated, the consolidation generally lax,

with here and there areas of more distinct consolidation about the bronchi. The entire pleural surface of this portion of the lung covered with a slight fibrinous exudation, more marked between the lobes. The parietal pleura congested. Abundant muco-purulent secretion from the bronchi everywhere in the lungs, particularly in the posterior parts. In the left lung there are a few areas of consolidation about the bronchi, but the consolidation is everywhere less well-marked than in the right. The bronchial glands distinctly enlarged, reddened, and slightly pigmented.

Heart. — Medium size. Both layers of pericardium smooth. The myocardium generally pale without any appearance of faded leaf. In the right ventricle there are fresh clots. In the left there are old thrombi covered with adherent fresh clots along the musculæ trabeculæ of the septum and the apex of the ventricle.

Liver. — Large. Surface pale, markings somewhat obscure. Gall-bladder distended, bile-ducts free. On section, liver pale and somewhat cloudy.

Spleen. — Seventeen by ten by five centimetres. Weight three hundred and forty grammes. Surface covered with a slight fibrinous exudation. On section, comparatively firm, homogeneous, of a dark-red color, small dark-red points of hæmorrhage scattered through it. Neither Malpighian bodies nor trabeculæ visible.

Kidneys. — Of ordinary size. Surface smooth and capsule not adherent. The lobules very evident. On section, cortex pale, markings faintly visible, the labyrinth cloudy. On the surface of the right kidney there is a slightly elevated, soft, nodular mass, one and a half centimetres in diameter. On section the cortex at this point is soft, pale, with opaque white streaks and points scattered through it; where it extends into the pyramid, it has a reddish color.

Mesenteric Glands. — Both of the mesentery and mesocolon are enlarged, deeply injected, and soft. The post-mesenteric are also enlarged and reddened.

Intestines. — In the intestines there are numerous ulcers. There is one low down, almost in the rectum. Throughout the large intestine there are numerous ulcers with sharply circumscribed edges and perfectly clean base, extending down to the muscular coat, one of them extending through this to the peritoneum. In the small intestine also there are ulcers of the same general character as those in the large. Higher up in the intestine are some with sloughs in the base.

Adrenal Glands and Pancreas. — Normal. The pancreas large and firm.

Pharynx and Larynx. — Mucous membrane of the pharynx covered with an extensive muco-purulent mass. The tonsil on left somewhat enlarged and covered with a whitish deposit, which is easily scraped away, but does not wash off. On removal of this there is an epithelial loss of substance. There is an extensive formation of the same substance on the lateral wall of the pharynx opposite to the larynx. In the larynx there is an irregular ulcer on each side along the posterior portion of the vocal cord. The edges of the ulcer have a grayish film over them; the base also. All of the cervical glands are enlarged, softened, and reddened. The trachea is intensely congested.

ANATOMICAL DIAGNOSIS.

Typhoid Fever. — Ulceration of ileum and colon.

Diphtheria.

Heart thrombus.

Renal Infarction.

Congestion, œdema, pneumonia, and bronchitis in the lungs.

Acute swelling of spleen.

Diphtheritic ulceration of larynx.

Diphtheritic pseudo-membranous inflammation of pharynx.

Hyperplasia of lymphatic glands.

Acute parenchymatous degeneration of liver, kidneys and heart.

BACTERIOLOGICAL EXAMINATION.

Lung. — Pure culture streptococci.

Tonsil. — Numerous streptococci and other cocci, with a few Klebs-Löffler bacilli.

Trachea. — Mainly streptococci and Klebs-Löffler bacilli.

Tracheal Gland. — Negative.

Bile. — Typhoid bacilli.

Spleen. — Typhoid bacilli.

Mesenteric Glands. — Bacillus coli communis.

Pleura. — Streptococci.

Bronchial Glands. — Streptococci.

Heart's Blood. — Negative.

Heart's Thrombi. — Typhoid bacillus; streptococci.

Kidney Infarction. — Typhoid bacilli; streptococci.

Kidney. — Typhoid bacilli; streptococci.

Liver. — Streptococci.

One of the two pigs inoculated with the pure culture of the Klebs-Löffler bacillus, obtained from the trachea, died in forty-eight hours with the pathological lesions of experimental diphtheria. The bacilli, however, were not found at the seat of inoculation. As far as I know this is the first reported autopsy of a mixed case of typhoid and diphtheria. It proves conclusively that certain of the inflammations of the throat occurring in typhoid may be due to a mixed infection with the Klebs-Löffler bacillus. The other cases cannot be considered as more than suggestive. Wagner, who has given the most accurate description of the angina accompanying typhoid fever, calls attention to the greater frequency of pseudo-membranous affections when diphtheria is prevalent.

The bacteriological examination of the tissues of the case show that three different infections have taken place. One by means of the typhoid bacillus; one by means of the Klebs-Löffler, and one by a streptococcus, which probably found its point of entrance in the tissues from the lesions in the throat. Evidences of these three different infections were present in the tissues. The general lymphatic hyperplasia was due both to the typhoid and diphtheria. The lesions in the lung and pleura were due to streptococci coming from the throat, and from here the general infection of the body may have taken place. Streptococci were found in the thrombus in the left side of the heart, and on section of the tissue beneath the thrombus there was a slight endocarditis with streptococci in the superficial layers of the tissues. The embolus which produced the infection of the kidney came from the heart thrombus and produced a circumscribed purulent infiltration of the kidney in the place of a simple infarction. No effect seems to have been produced on the intestinal ulcers by the other infections. They had the typical appearance of late ulcers in the beginning of healing. The presence of the streptococci in the acute fibrinous pleurisy shows that they may produce in the pleura as typical a fibrinous exudation as is found in the pleurisy accompanying an acute croupous pneumonia.

(To be continued.)

Clinical Department.

A CASE OF ACUTE INFECTION SIMULATING ACUTE YELLOW ATROPHY OF THE LIVER IN A PREGNANT WOMAN: AUTOPSY.¹

BY SAMUEL CROWELL, M.D., DORCHESTER, MASS.

JAUNDICE and a sudden suppression of urine in a pregnant woman, lasting eight days and ending in death, is the story in a nutshell. We will go into the clinical history of this interesting case, however, more in detail.

Near midnight of November 15, 1893, I was consulted by a husband seeking aid for his wife, who was suffering from pain in the back and stomach. She was a primipara, at about the sixth month, age forty-two. She had always enjoyed the best of health, and had been entirely free from the many ills accompanying pregnancy. She attended a lecture in town that very evening, retired for the night in her usual health, but shortly afterwards began to complain of this pain, which no domestic remedy seemed to relieve.

November 16th. I was sent for in the early evening to see the patient. The quarter-grain of morphine of the night before had relieved the pain, and it had not recurred. The patient was bleeding from the gums, and had been spitting and wiping blood from her lips all the afternoon. The face, eyelids, lips, hands and feet were swollen. Headache, and vomiting of all nourishment taken into the stomach, had existed all day. On inquiry it was found that not a drop of urine had been passed for the twenty-four hours. The patient was about the house doing her work. At my request, she passed four ounces of bloody-looking urine, containing a large amount of albumen, granular and hyaline casts, renal epithelium and a few blood-corpuscles.

November 17th. I saw the patient in the morning by daylight. She was deeply jaundiced. This jaundice I believe to have been present from the first, but just when it appeared it was hard to say, as no one had noticed it, and the gaslight would have hidden its presence the night previous on my visit. She had vomited everything but cream-of-tartar water. The headache was less, she did not complain of it again until twenty-four hours before her death. The skin was moist from the attempts made to sweat her. The bowels had moved slightly from a dose of *ol. Tiglii*, and there was only two ounces of urine to show for the twenty-four hours' excretion of the kidneys.

November 18th. Condition the same; mind clear; no urine for twenty-four hours. Ten grains of calomel had produced one watery discharge.

November 19th. Condition the same; no urine.

November 20th. Condition the same; no urine.

The temperature taken at the time of my visits was generally normal, twice I found it 99°. The pulse ranged about 76 per minute.

November 21st. Condition the same; no urine. In the morning I started up labor with a bougie. The uterus responded, and in the evening I took away a macerated foetus at about the sixth month. The patient's condition was good. There was no flowing connected with the miscarriage and practically no discharge afterward.

November 22d. Condition the same; no urine. I

drew, with the catheter, five ounces from the bladder. In the afternoon a convulsion occurred lasting ten minutes, followed by delirium, requiring two to hold her in bed, and an intense headache and pain through the right eye. The tongue became thick and swollen, and the features expressionless. In the early evening she had a second convulsion of about the same duration. This was followed by delirium alternating with short lucid spells during the night, and ending in death at eight A. M., November 23d, on the eighth day of the disease.

At the autopsy made five hours after death, the heart and lungs were normal. No fluid in the serous cavities. Liver not descended below the ribs. It extended well over to the left side of the body, and seemed somewhat larger than normal. It was firm and smooth. The gall-bladder was not distended.

Specimens were sent to Dr. W. T. Councilman for examination. His report reads:

"There was brought for examination a portion of the liver, one kidney, spleen, a portion of the heart and of the uterus.

"The portion of the uterus brought had about the thickness and consistency of the uterus at the end of pregnancy. It was rather soft and of a pale-yellowish color. On its internal surface there were some adherent clots.

"The liver microscopically was of a dark green color. The bile-duct was not occluded at the autopsy. The kidney was very large, of a pale-yellowish color, with a distinct greenish tinge. The cortex was smooth. No appearance of hæmorrhage. On section, the cortex enlarged and pyramids congested. Markings obscure. On section, the cortex had the same greenish appearance as the surface. Cultures made from the organs gave pure cultures of streptococci in all of the organs. They were most abundant in cultures made from the uterus and spleen. The cultures from the liver and kidneys gave only a few colonies. The streptococcus found belongs to the general type of the streptococcus longus. It grew out in long thin chains, and the opposing surface was flattened.

"Microscopic examination of the tissues was made both in the fresh state and after hardening in various media. At the fresh examination a considerable amount of bile pigment was found in the kidney, with well-marked fatty degeneration, principally confined to the collecting tubules. Sections of the hardened organ showed a considerable degree of acute nephritis. The glomeruli were but little altered. The only change noticed was that the capillaries were somewhat thickened and indistinct. The epithelium of the convoluted tubules was swollen, fatty and in places distinctly necrotic. Accumulations of round cells and leucocytes were found in various parts of the parenchyma. Numerous casts were found in the collecting tubules. The liver showed, both fresh and hardened, an injection of the smaller bile-ducts with inspissated bile. There was marked fatty degeneration of the cells, and in places the cells were necrotic. No change was found in the heart other than a very slight fatty degeneration.

"The case appears to be one of general infection with streptococci proceeding from the uterus. The condition of the kidneys is probably to be referred to this. The jaundice and the lesions in the liver may have been due to other causes."

The autopsy is of great value to us in making the

¹ Read by invitation before the Obstetrical Society of Boston, December 9, 1893.

diagnosis, though it does not throw all the light we want; it fails to explain the jaundice. Without its assistance one would not be far out of the way in making a diagnosis of acute yellow atrophy of the liver, brought about by the general infection from the uterus, and especially aided in its development by the kidneys, except that percussion of liver dulness was too great.

Jaundice in pregnancy is of rare occurrence, and should always be looked upon as a grave complication, threatening the life of both mother and child, especially the life of the child, even where the jaundice is of benign origin.

Acute yellow atrophy of the liver is considered to be the cause of jaundice in a large proportion of the cases, though jaundice may be produced by the same causes as in the non-gravid state.

It is also stated that the pressure of the gravid uterus upon the liver is a cause of jaundice. This theory seems to me hardly tenable, when one considers the innumerable pregnancies where the liver must be greatly pressed upon without jaundice, and the few cases where it occurs are in those months of pregnancy before the uterus has attained sufficient size to cause pressure.

A CASE OF MYXEDEMA TREATED BY THYROID EXTRACT.¹

BY W. N. COWLES, M.D., AYER, MASS.

In view of the prevailing interest in the subject of myxedema and allied affections, I have prepared a report of the following case:

Mrs. S., aged forty-two years, is the oldest of a family of five children. Her mother, a brother, and three sisters are living and in good health. Her father died two years ago at the age of sixty-six years, after a long illness accompanied by gangrene of one foot. For many years previous to his death his eyes presented a bulging, staring expression, so marked as to attract the attention of all who saw him. He was of an excitable disposition, and his ability to work was limited by what his family called "nervousness and heart disease." His family physician says he had an excitable heart. There is no history of thyroid enlargement. A photograph of this man taken just before his last illness shows the characteristic facies of Graves's disease.

My patient, Mrs. S., has always been well until her present trouble began. Menstruation has always been regular except when interrupted by pregnancy. She is the mother of five children, three of whom are living. About seven years ago, soon after the birth of her youngest child, the patient noticed that she was getting bulky in body and awkward and weak in her movements. The trouble increased at a variable rate until July, 1893, when her condition was as follows:

The body bulky; the face, hands and feet distinctly swollen, the swollen surface not pitting on pressure. The skin was dry, harsh, thick, and always cold to the touch. There was a pale-yellow tint of the surface, suggestive of slight jaundice. Scaling of the epidermis was noticeable over the greater part of the body. The skin of the ends of the fingers was thick and cracked, and the nails seamed and brittle. The hair had a dry and broken appearance. The tongue was unusually broad and thick. Speech was slow and thick, as if the

tongue were too large for the mouth. There was apparent mental sluggishness, with an inclination to melancholy ideas. The temperature was always subnormal, 96° to 97° F. in the mouth. The thoracic and abdominal viscera appeared to be normal. The thyroid gland could not be felt. The patient complained of great weakness, of being easily tired, of shortness of breath on exertion, and of a constant feeling of coldness. She had noticed a lack of perspiration, even in hot weather. The urine collected for several days in succession in July, 1893, amounted to about two pints in twenty-four hours. Specific gravity, 1.024 to 1.026; color, pale; reaction, acid; sediment, normal; no albumen or sugar found.

On September 8th, Mrs. S. began taking desiccated sheep's thyroids, in doses of one-third of a gramme, three times a day.

Her condition at the time was practically the same as in July. Weight, 204 pounds; temperature, 96.4° F.

After three or four days of treatment the patient complained of severe pain in the lower extremities.

September 18th, the patient's weight was 192 pounds, the temperature 96.5° F. The amount of the remedy administered was reduced one-half, on account of severe pain in the lower extremities.

September 26th, weight, 190 pounds; temperature, 96.5° F.; no pain or discomfort of any kind. The remedy was increased to one gramme daily.

October 2d, weight, 186 pounds; temperature, 97.5° F. Severe pain in head and left shoulder. Dose of the extract again reduced to half a gramme daily.

October 7th, weight, 188 pounds; temperature, 98.2° F. The dose of desiccated thyroids was again increased to one gramme daily, and continued at that amount without further discomfort.

October 14th, weight, 182 pounds; temperature, 98.4° F.

November 12th, weight, 172 pounds; temperature, 98.6° F.

December 20th, no further change in weight. The patient's appearance has wonderfully changed. The swelling of the face, hands and feet has literally melted away. During the first six weeks of treatment there was marked anæmia, as shown by pallor of the mucous membrane. That condition is gradually giving place to a ruddy, healthy appearance. There has been a considerable desquamation of the skin, especially upon the hands and feet. The surface is warm to the touch. The yellow color has disappeared. The perspiration has returned. The condition of the nails and hair has improved, but is not yet normal.

A record of a number of urinary examinations made during the first two months of treatment shows an increase in amount to about four pints in twenty-four hours; specific gravity, 1.018 to 1.022, with no marked departure from a normal quality.

Quick movements, rapid speech, and an animated manner have taken the place of former slowness of speech and action, and stupid appearance.

This case appears to be especially interesting on account of the probable occurrence of exophthalmic goitre in the father of the myxedematous patient, Mrs. S.

A MEMBER of Sorosis says that every young girl should read Naphey's "Physical Life of Woman," a book called "Tokology," and Cook's "Mothers and Daughters."

¹ Read before the Section of Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, December 20.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOL- OGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

REGULAR meeting, Wednesday, December 20, 1893,
DR. F. C. SHATTUCK in the chair.

DR. J. J. PUTNAM presented a paper on

THE FUNCTIONS AND THE THERAPEUTIC USES OF THE THYROID GLAND.¹

DR. W. N. COWLES reported

A CASE OF MYXŒDEMA TREATED BY THYROID EX- TRACT.²

DR. J. C. WHITE: I have not used this substance in the treatment of skin diseases, but judging by what I have read, it follows the rule of many new remedies in cutaneous therapeutics, that do not seem to produce in the hands of subsequent experimenters the results produced in the hands of those who published the first accounts. I should like to ask some of the gentlemen who speak of its action upon the growth of the hair in myxœdema, whether they noticed it produced such astonishing results in male patients. If it would make the hair grow in male patients, it would be quite different from making it grow in the female patient.

DR. PUTNAM: Most of the cases have been in women. I cannot answer from memory.

DR. F. C. SHATTUCK: Of my four cases two have been in males and two in females. In one male, a man of sixty-nine, the beard is distinctly thicker than it was before he took the thyroid extract. I think there is more change in the hair of the beard than in the hair of the head. My other male patient has been under treatment too short a time to give opportunity for observation in this respect. With regard to the loss of weight, which seems to be so common a feature in the treatment of myxœdematous patients, and which has led to the employment of the drug for obesity with good results apparently, it is interesting to note that in one of my cases there was a gain of twenty pounds in weight, coincident with great improvement; and the weight has been properly distributed. The waist and the neck have got smaller, and the legs of proper shape, which they were not before. That, as far as I know, is rather unusual. It has always seemed to me that this Brown-Séquard treatment by testiculin is by no means analogous to the use of thyroid. We call both the testicle and the thyroid, glands; but, physiologically, they have nothing in common. I was a good deal interested in a patient of mine at the hospital this winter, as vigorous, fine-looking a man as one could wish to see, who was castrated several years ago for some disease of the testicles without the slightest change of appearance, up to the present time at any rate.

DR. CLARK: In regard to a possible relation of the spleen to the thyroid gland, I think some recent experiments of Zanda are interesting. This observer performed thyroidectomy on dogs without any evil results in cases where the spleen had been removed at least a month before. He concluded from this that the thy-

roid probably neutralizes some toxic principle, apparently a product of tissue change sent into the blood by the spleen.

DR. PUTNAM: I did not speak of the therapeutics of myxœdema, because Dr. Shattuck recently read an interesting paper on that subject.³ I should like to add the fact that quite a large number of cases of cretinism have been published as much benefited by thyroid extract even where the disease had persisted to adult life. Two or three of these cases have been under the care of Dr. Osler, of Baltimore.

There is another interesting point that I meant to refer to, which has been made the subject of a good deal of experimental work, namely, the relation of animal food to thyroidectomy. It was first observed by Munk that some of his animals died after they swallowed lumps of meat; and that was thought to strengthen his theory that the result was due to injury of the nerves of the neck, but it was observed that if the extractive matters were removed from the lumps of meat by boiling that these results did not occur. On the other hand, it was found that if the animals were fed with strong beef broth that they apparently did die sooner, and experiments of this sort form a part of this recent series to which I referred, as having been just published in Virchow's Archiv.

DR. C. B. PORTER referred to the question of pregnancy. It was observed quite early that during pregnancy some of the symptoms of myxœdema seemed to grow less severe, and Dr. Murray suggested that the thyroid of the foetus might be doing duty for the lacking thyroid of the mother. Some doubt, however, is thrown on that by certain observations I have read. It was found by Coiztisni, that if rats were pregnant, they seemed to suffer more from thyroidectomy than if not pregnant.

It is also an interesting fact, to which Dr. Porter referred, that occasionally the cachexia does not seem to follow thyroidectomy, and that has been reported, I think, after complete atrophy of the thyroid in Graves's disease. It would seem that sometimes this may be due to the fact that accessory glands exist, but it does seem as if a person could get accustomed to do without the thyroid.

Reports indicate that not all observers find the same improvement in the use of these preparations of the thyroid in healthy persons. It would also seem that in persons in health the effects of the thyroid were temporary, that loss of weight only went on to a certain point, or was fluctuating.

A case reported by Dr. Bramwell and one or two of Vermehren's cases would seem to indicate that the improvement as regards the skin and nutrition at large, was not necessarily lasting.

THE Smithsonian Institute has received from the Peruvian Army Surgeon-General nineteen crania of pre-historic character. They are of interest because they show that in that far-off age the skull was trephined. In one instance the patient survived the removal of a fragment four inches long and one and one-quarter inches wide; the cavity was covered with silver. In one case the patient survived two trephinations, but died after the third. The instruments used were flint. — *Medical Standard*.

¹ See page 153 of the Journal.

² See page 167 of the Journal.

³ To be published in the Journal of February 22d.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, December 9, 1893, the President, DR. CHARLES M. GREEN, in the chair.

DR. S. CROWELL, of Dorchester, reported, by intimation,

CASE OF ACUTE INFECTION SIMULATING ACUTE YELLOW ATROPHY OF THE LIVER IN A PREGNANT WOMAN: AUTOPSY.¹

DR. C. E. STEDMAN regarded the case as one of peculiar interest from the fact that the patient secreted only eleven ounces of urine in eight days, three of these being days of complete anuria. During the greater part of this time the patient appeared fairly well.

DR. C. G. CUMSTON said that the endometrium's well-known ability to absorb would account for this case of general infection.

DR. WM. INGALLS thought it was a very curious fact that the patient was in such good health previous to the attack. The case would suggest some antecedent cause.

DR. M. H. RICHARDSON thought the case was an extraordinary one and that its true origin was not yet found. The unusual points were the sudden onset, and the absence of marked constitutional disturbances. One would suppose that the pulse, at least, would be affected by the streptococcus infection.

DR. J. G. BLAKE would agree with Dr. Richardson that the case was certainly very obscure and not thoroughly understood.

DR. EDW. REYNOLDS said he believed a great advance was being made in our understanding of sepsis by the aid of bacteriology. Clinical experience had taught him that the sense of smell might be of little use in these cases, that severe sepsis might exist with absence of odor in the uterine discharges.

DR. M. H. RICHARDSON said that there was often no odor from pure cultures of certain septic bacteria, but that the degeneration of the tissues which followed with the addition of other bacteria resulted in the foul stench.

DR. C. M. GREEN saw the patient two days before death. From the appearances alone at this time one would wonder why it was necessary to keep the patient in bed. He had learned to believe, however, that in sepsis a sense of comfort and well being on the part of the patient was often of serious import. As to the odor this was not infrequently absent in cases of true sepsis.

DR. M. H. RICHARDSON reported

THREE CASES OF SALPINGITIS OF UNUSUAL EXTENT,² and showed the specimens.

DR. G. HAVEN mentioned reported cases where a preliminary operation was done in order to examine the contents of the tubes. He himself had operated some twelve or fourteen times with good recoveries in all except one who died of embolism on the ninth day. He thought that one could not operate too early.

DR. J. G. BLAKE would take issue with the treatment of the second case by laparotomy. Why not have drained through the vagina which would have been a perfectly safe operation. He has been treating cases in this way for thirty years. A case he had treated

in this way for a double abscess two years ago, gave birth to a child a few nights ago. He remembers another case where the abscess was very large and where the patient has had several babies since. Of course, the risk in opening the abdomen nowadays is very slight, but still there is some risk. Hence he would prefer to evacuate the abscess per vagina whenever that is possible.

DR. S. CROWELL referred to an abscess in the posterior cul-de-sac of the vagina which was opened through the vagina, but pointed later in the left iliac region.

DR. C. G. CUMSTON, late of Geneva, Switzerland, showed some instruments.

DR. G. HAVEN reported a case of rapidly growing fibroid of the uterus and showed the specimen. The patient, a woman of forty, had been examined within six weeks and nothing found. Since then the fibroid had rapidly developed and she had lost much blood during menstruation. The tumor was removed and the patient has made a perfectly good recovery.

DR. M. H. RICHARDSON showed a pregnant uterus removed for cancer of the cervix.

Recent Literature.

A Manual of Practical Hygiene. Designed for Sanitary and Health Officers, Practitioners and Students of Medicine. By W. M. L. COPLIN, M.D., and D. BEVAN, M.D. With an introduction by H. A. HARE, M.D. 140 illustrations. Philadelphia: P. Blakiston, Son & Co. 1893.

Great improvement has taken place in the past five years in the character of works pertaining to practical hygiene; and this book offers no exception to this statement. Its excellent treatment of the subject will make it a valuable hand-book for reference.

The general character of the book may be understood from the following list of subjects treated: Causes and Prevention of Disease, Individual Hygiene, Clothing, Food, Water, Air, Climate, Soil, Habitations, Sewage, Disposal of the Dead, Technic. The chapters on Climate and on Habitations are especially full and complete.

The following extract from the introduction sets forth the general scope of the book: "Heretofore the busy practitioner has often neglected hygiene, in its relation to private life, because the reliable books were, most of them, based on military needs. The architect has found that too often the stated scientific facts clashed with the utility of his building, and, as a result, in many instances serious hygienic sins were committed. It is to meet such cases that this book was planned and written; and that its objects have been accomplished will be evident to any one who is wise enough to study this important branch of knowledge in its pages."

Disease in Children. A Manual for Students and Practitioners. By JAMES CARMICHAEL, M.D., F.R.C.P. (Ed.), Physician Royal Hospital for Sick Children, University Lecturer on Disease in Children, Edinburgh. New York: D. Appleton & Co.

This handy little book takes up briefly the whole subject of pædiatrics, and finishes with an excellent appendix, containing directions for making the simpler dietary of children. It should meet with much favor.

¹ See page 167 of the Journal.

² See page 159 of the Journal.

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SANITARY INSURANCE: A SCHEME.

UNDER this head, Dr. G. Walter Steeves writes in the January *Nineteenth Century* magazine, taking for his text the proposition that "thousands of deaths annually result from diseases which are in the most absolute sense preventable."

The complaint which he has to make is that under the existing social arrangements, there is no sufficient guaranty to the purchasers or lessees of tenements as to the perfect sanitary condition of such dwellings. It frequently happens that the first intimation of a sanitary defect in a house is an outbreak of a preventable disease, or one of those infectious maladies classed under the generic term "zymotic," such as diphtheria or typhoid fever. It is an acknowledged fact that people are living at the present day in habitations whose condition of healthiness is only tested by the sudden advent of an infectious disease, and it is equally true that a house is usually considered healthy till found unhealthy. If the wealthy may indeed carefully select their dwellings, the time has certainly not arrived in any civilized country when sanitary surroundings are a *sine qua non* with the masses; and the majority are only induced to inquire into such matters after serious illness has occurred, or some marked insanitary condition has been pointed out.

Despite the fact that the Health Department is a prominent feature with all our municipalities, that there are Local Boards and State Boards well equipped and that all our universities have departments for the study of hygiene and laboratories for bacteriological research, and that grand results have been accomplished by all these instrumentalities — it would appear from mortality statistics that the public are not yet sufficiently protected against insanitary dwellings and surroundings.

Dr. Steeves cites instances like the following, which seem to settle the question of the tenant's protection — such instances can be paralleled in the history of many municipalities:

Mr. A., a prosperous draper, with a family of young children, elects to lease a house in a presumably healthy suburban district; he himself is quite ignorant of sanitary matters, but is naturally anxious to be on the safe side; consequently, as soon as he has taken possession, he communicates with the Health Department, asking for an inspection. He is surprised to find that as he cannot complain of any nuisance, the services of the Board's officials are not at his disposal. He is next advised to call in a sanitary engineer, who may or may not be associated with some sanitary association, to make an examination of the premises. This time he is successful; he is satisfied with the report, pays his fee, brings his family from town, where they have always enjoyed good health, and settles down at his new fireside with a feeling of relief. Six months elapse, when suddenly one of his children complains of sore throat; the doctor is sent for, and to the horror of the parent, the patient is declared to be suffering from diphtheria. The doctor now notifies the local Board of Health; and the main drain of the house, on being carefully tested by the officials, is found faulty — cracked by the sinking of one of the walls of the house, or one of the joints underground has been badly cemented. A further examination reveals the fact that the earth in the immediate vicinity is sewage soaked.

If such an incident as the above were to be taken as a statement of sober fact, it would teach either that the engineer who made the first report was careless in his inspection, or that the drain had subsequently become defective; in any case the necessity of frequent sanitary inspections of premises is apparent. Dr. Steeves's especial contention is that the existing protective associations, while doing much good work, have not gone far enough. As for property that has been standing twenty or thirty years, inspections with the necessary testing, should be scrupulously conducted three or four times yearly.

The "scheme" which this writer proposes, is as follows (how far it is practicable we must leave to our readers to judge): It is proposed that any city or district may organize for itself a sanitary protective and insurance association founded for the purpose of providing the public with a source of protection against unsanitary dwellings and surroundings. The definite objects would be:

- (1) To examine into the sanitary condition of any building previous to tenancy, or after, and to afford skilled advice on hygienic matters or appliances, either on existing premises or on the plans of proposed arrangements of new buildings.
- (2) To issue certificates respecting the sanitary condition of dwelling houses and buildings.
- (3) To provide the means by which a cleanly and wholesome state of dwelling houses and premises may be maintained.
- (4) The sanitary registration of dwellings.
- (5) The insurance of buildings against a defective sanitary condition.

It will be seen from the above statement that such an association would have for one of its principal duties to keep yards clean, house-drains flushed, gullies cleared out, and all refuse promptly removed. Landlord and tenant would thus be relieved of needless worry.

It is a part of this scheme to insure dwellings against preventable diseases; it does not seem probable that this writer would advocate the indemnification of persons in the case of illness, for this would open the door to exorbitant claims. Nor is it quite clear on what principle damages could be assessed.

His notion is that dwellings are to be kept in sanitary repair by his hypothetical association in consideration of an annual premium paid by the owner, tenant, or both. In order that any property should be accepted by the association as a risk, it would be subjected to a stringent examination by both engineer and medical officer. Before this inspection could be made, a written permit must be obtained from the owner. The report with full details shall then be submitted to the members of council, who, with all the facts before them, assisted by the advice of their officials, would determine on an acceptance or rejection, as the case might warrant. When once the dwelling is insured, it will be the duty of the association to see that it is kept in a healthy condition. It is obvious that such a house would be subjected to frequent inspections, and minor defects would be at once corrected; it is also evident that all work (plumbing, etc.) would be performed by skilled and trusted workmen.

The review writer thinks that builders and landlords would favor this scheme, (1) because they would have an opportunity of having their property certified and registered; (2) they would be free from petty annoyances and frequent demand from tenants on account of unsanitary conditions arising from faulty traps, house-drains, etc.; (3) where the property was of such a high order as to warrant its acceptance by the association as an insurance risk, the owner would practically be rid of all responsibility.

The Boston Board of Health at the present time will, upon application, send one of its inspectors to examine the plumbing in a house or tenement where, on account of sickness or for other reason, there is cause to suspect an unsanitary condition — more than this cannot be undertaken without greatly increased resources. In other and smaller cities of this State a similar provision prevails, though the ability to respond to such demands is even less in proportion to the populations. The New York Board undertakes to do there about what the Boston Board does here.

Such an incident as the following, however, is not unheard of. In a large building, rented for industrial purposes, complaint is made by the occupants that the plumbing is defective. Inspection by the Board of Health shows that the complaints are well-founded, and that the defects are both grievous and dangerous to health. The owner is notified. Plumbers are employed, and several hundred dollars are expended.

Their work is approved by an inspector of plumbing in the department of the inspector of buildings. Upon re-examination, the Board of Health finds the condition of the plumbing as faulty as before, but the work having been accepted and approved by the inspector of the other department, the Board is powerless to take further action, the owner's money has been wasted, and the occupants are still exposed to the same danger and inconvenience.

It is not a new proposal to undertake the sanitary inspection of dwellings and of buildings as a private commercial enterprise, but we doubt if it hitherto has been successful from a financial standpoint. There is no doubt, however, that of two dwellings offered for lease or for sale, one of which carried a guarantee of its sanitary condition and the other not, the former should, and we believe would, command a better price than the latter.

SURGICAL TREATMENT OF CRIME.

IN the last issue of the JOURNAL, editorial reference was made to a curious bill lately presented to the Ohio Legislature for the treatment of condemned criminals by using them as material for physiological experiment, and then putting them to death under ether. This may be called the physiological treatment of crime.

We have, before this, on several occasions referred to a proposition which is not new, but which seems to commend itself to members of the medical profession in our Southern States, namely, that criminals should be reformed and held in check by castration, instead of by imprisonment and hanging. A correspondent, Dr. Bishop, of Smithsburg, Md., sends us his views on this subject, which are not without originality as set forth before the Medical Society of Washington County, under the title of "Surgical Treatment of Crime."

Dr. Bishop is impressed with the feeling that law is a curious business, and that lawyers are curious people, but he thinks there might be hope of improvement if the legal mind would give its attention to medical methods. This idea he develops as follows:

"If a case comes into court (the hospital for the care of social maladies being so called) for treatment for curative or preventive results, and a remedy should be proposed altogether rational and promising, its use is not permitted by the learned judge until a precedent for it has been discovered. Then the counsel in the case turn over the pages of legal lore to the times when people did not seem to know much of their own affairs, and if they find something like the case in hand (like it, because it is not like anything else), then they employ it as a remedy, — not otherwise. Under such circumstances it is hardly matter for wonder that the disease keeps ahead of the remedy, or that the law's delay should be a proverb and a threat against honest business. It is not so in medicine. If a physical malady occurs, all scientific methods are at once invoked to discover its nature and an efficient remedy and preventive. Chemistry, microscopy, physiology, are all employed. The profession everywhere is enlisted in the investigation.

One doctor is never employed by anybody to defeat the honest efforts of another.¹ Under such conditions it is hardly marvellous that there should occur marvellously contrasting results. In court, in equity cases so-called, the chances are largely with the rogue."

Returning to the subject of surgical treatment of crime, he says:

"Crime of all kinds is on the increase; our jails and almshouses and other asylums are filled with its products. Lynch-law cases (the signal-lights of lost confidence in courts of justice) are flashing everywhere every day, and everyday business transactions are largely based on individual integrity.

"On the other hand, it need only be mentioned that the average of human life is being gradually raised. Not only that, however, but all the deadly diseases of the past are under virtual control.

"Population is no longer decimated. People no longer fly in insane fear from house and home at the approach of cholera or yellow fever where medical men hold sway.

"Seeing that these things are so, would it not be wise for the one profession to borrow the methods of the other? Nay, would it not be even better to profit by both their example and assistance?

"The medical profession have long since shown that criminals are of germ origin, some peculiar character or condition of the spermatozoon resulting inevitably in the production of a criminal. The saying, '*Nascitur non fit*,' is as true, therefore, for the criminal as it is for the poet. Now, the doctors have found that the true way to prevent diseases of germ origin is to prevent the germ; and if the law wants to prevent criminals, the sure way to do it is to sterilize the parent criminal, and the only way to do that is to castrate him. Of course there will be a thousand objections urged against the remedy, only two of which will be worth answering. One will be cruelty, the other danger to life, both of which are already negated by anaesthesia and asepsis. Doubtless there will also be the epithets 'uncivilized' and 'unchristian' applied to such treatment. But how will prevailing methods of treating criminals compare with this? Now they are penned up together to fester and ferment into more and more repulsive and dangerous criminal forms,—the petty thief emerging in form of a daring robber and the robber in the shape of a murderer.

"The practical effect of it all is the production of murderers by cultivation and breeding and the subsequent slaughtering of them by hanging. The thief, especially a bank thief, is imprisoned until the baby is weaned; but the spots of the leopard change not and the thief remains a reproducing thief in spite of legal punishment. How simple and how clean and how effectual the germicide method! You destroy the germ factory of the thief and so reform the thief himself more surely and effectually than all the prayers of the righteous would do it and prevent the production of thieves. If you do not breed thieves you will not have them.

"We owe it to the old English custom of hanging thieves that we are now as well rid of them—more than we owe it to moral suasion.

"One curious result of the treatment would be the settling of the race problem.

"Castration would hardly be a hardship to the negro. It has been practised upon members of the race from all time.² The harem of the Turk is always supplied with

negro eunuchs. Why they were selected we may never know. Possibly it was because there were individuals who could be restrained in no other way. Of course a law declaring all crimes not punishable by death shall be punished by castration would not be tolerated by the Constitution as it is now written. But a law could be enacted punishing all slighter crimes by an exceedingly severe flogging, but releasing the criminal upon producing proof of recent castration. There is a Japanese law which secures the destruction of State offenders by restoring to the family the estate if they could prove that the offender had committed suicide. Truly wonderful is aseptic surgery: it enables us to literally obey the Scripture which enjoins us to cut off the offending member. It is, of course, taken as understood, that lady criminals are meant also, it being as easy to cure one as the other."

DISSECTION IN THE PUBLIC SCHOOLS.

It seems to be dawning upon the minds of some of the members of the Boston School Committee that a foolish thing was done when the Committee passed a vote recently, prohibiting all dissection of animals in the public schools. The idea apparently was that, if zoology could not be taught without dissection, so much the worse for zoology. Some members of the Committee, however, have now sufficiently recovered their mental equilibrium to admit that a cold-blooded animal, a fish or an oyster, for instance, may be dissected, but a warm-blooded animal may not.

This somehow suggests the art-code of members of our common council, that little boys in diapers or panties may be done in stone, but little boys without may not.

At the last meeting, on Wednesday evening, it was voted, after a sharp discussion, that dissection of animals be allowed in the public schools, and so the question returns to the *status quo ante*. We are not by any means enthusiastic that zoology should be taught in the public schools—certainly not in the grammar grade; but if it is to be taught at all, there is but one way to teach it—thoroughly, by means of dissection.

MEDICAL NOTES.

A SPECIAL VACCINATION TRAIN.—The Pennsylvania Railroad Company has sent out a special train with two physicians, who are to go over the whole line to Chicago and vaccinate at each station all the switchmen, section-men, gate-keepers and other employes.

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.—The Medical Society of the District of Columbia will celebrate the seventy-fifth anniversary of its organization in Washington, on Friday, February 16th.

A NEW MEDICAL QUARTERLY.—Dr. Joseph M. Matthews, of Louisville, Ky., has issued the first number of his new quarterly journal devoted to the diseases of the rectum, gastro-intestinal diseases, and rectal and gastro-intestinal surgery.

¹ Except in giving expert testimony.

² Until they have become quite used to it.

A NEW ITALIAN JOURNAL.—Guido Baccelli, M.D., Minister of Public Instruction in the Italian Cabinet and Director of the Medical Clinic in Rome, is to edit, with the association of Dr. Durante, a new Italian medical journal, *Il Policlinico*, a periodical of medicine, surgery and hygiene.

THE ACADEMY OF MEDICINE BUREAU OF NURSES.—The New York Academy of Medicine has established a bureau of nurses which was opened February 5th. Each nurse is charged a registration fee of two dollars; and a complete record of all her cases is kept on file, with the report of the attending physician as to her work. It is hoped to have the bureau open both by day and night as soon as it is sufficiently organized.

THE SECRETARY OF THE WISCONSIN STATE BOARD OF HEALTH.—U. O. B. Wingate, M.D., M.M.S.S., of Milwaukee, has been elected Secretary of the Wisconsin State Board of Health, to succeed J. T. Reeve, M.D., who retires June 1st next, after serving in that capacity since the board was organized, nineteen years ago. Dr. Wingate's term of four years as Commissioner of Health of Milwaukee, expires in April next; about two years ago he was appointed on the State Board of Health for a term of seven years by Governor Peck.

THE PROTECTIVE INFLUENCE OF VACCINATION.—The report of the medical superintendent of the hospital-ships of England is strongly corroborative of previously recorded experience as to the protective influence of vaccination in safeguarding nurses and members of the staff of small-pox hospitals against an attack, and more especially a fatal attack, of that disease. Of 1,201 persons employed on the staff of the hospital-ships during the years 1884 to 1892, only six, or one-half per cent., contracted small-pox, and all of those attacked recovered.

THE INTERNATIONAL MEDICAL CONGRESS.—The Minister of the Treasury of Italy has awarded the sum of 80,000 lire (\$6,000) from the reserve fund of the treasury, toward the expenses of the Eleventh International Medical Congress of Rome. This is given as a temporary instalment pending the meeting of parliament, when a special bill for an adequate contribution from the State will be presented by the ministry.

THE INTERNATIONAL SANITARY CONFERENCE AT PARIS.—The International Sanitary Conference which was to have met in Paris during the last week in January for the consideration of measures to control the cholera in the Red Sea and Persian Gulf in connection with the Pilgrimages to Mecca, was postponed by the French Government owing to incomplete arrangements made by other countries, especially Turkey which appointed no delegates. The postponed meeting was opened on the 7th of February, and the members were received by President Carnot, who welcomed them to the warmest hospitality in the name of the Republic.

PRELIMINARY PROGRAMME OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—At the Congress of American Physicians and Surgeons to be held in Washington May 29th, 30th, 31st, and June 1st, the following subjects have been selected for discussion: By the Association of American Anatomists, "Morphology as a Factor in the Study of Disease"; by the American Climatological Association, "Sewer Gas"; by the American Dermatological Association, "The Distribution and Control of Leprosy in the United States"; by the American Association of Genito-Urinary Surgeons, "Nephritis in its Surgical Aspects"; by the American Gynecological Society, "The Conservative Surgery of the Female Pelvic Organs"; by the American Laryngological Association, "The Surgery of the Accessory Sinuses of the Nose"; by the American Neurological Association, "The Influence of Infectious Processes on the Nervous System."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, February 14th, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious diseases: diphtheria 24, scarlet fever 44, measles 10.

REPORT ON STATE CONTROL OF VACCINE FARMS.—At the next meeting of the Section for Clinical Medicine of the Suffolk District Society, Wednesday, February 21st, Dr. D. D. Gilbert, of Dorchester, will give the report of a Committee appointed by the Norfolk District Society to investigate the various vaccine farms with reference to State control. The Committee was appointed to act with the aid of the Suffolk District.

THE MASSACHUSETTS GENERAL HOSPITAL.—At the meeting of the Corporation of the Massachusetts General Hospital last week, the following officers were elected: President, Charles H. Dalton; Vice-President, John Lowell; Treasurer, Franklin Haven; Secretary, Thomas B. Hall; Trustees on the part of the Corporation, Arthur Astor Cary, Edmund Dwight, Samuel Eliot, William Endicott, Jr., Thornton K. Lothrop, Nathaniel Thayer, Henry P. Walcott, Roger Wolcott. The Governor has sent to the Executive Council the following nominations as trustees of the hospital on behalf of the State: Charles T. Bemis, of Medford; David P. Kimball, Thomas E. Proctor, and William S. Bigelow, M.D., of Boston.

COST OF THE SMALL-POX EPIDEMIC IN LOWELL.—There were eight cases of small-pox in Lowell during the recent epidemic. Their occurrence cost the city nearly \$7,000. This sum includes the hospital expenses and the cost of the free public vaccination.

NEW YORK.

CHILDREN IN FACTORIES.—The State Factory Inspectors, in their annual report, transmitted to the legislature on January 31st, state that the number of children under sixteen found employed during 1893, was a fraction under 84 in each 1,000 persons, as against

38 during 1892, and 112 in 1887; showing a decrease of about 10 per cent. over 1892 and of 70 per cent. over 1886, when the law restricting the employment of children went into effect.

A RECEPTION TO THE SURGEON-GENERAL.—On Tuesday evening, February 6th, Mr. William Wood, the publisher, gave a large reception at his residence on 63d Street in honor of the new Surgeon-General of the United States Army, Dr. George M. Sternberg, at which there were present a representative gathering of the medical profession of New York and a number of other guests.

A FIRE AT THE MEMORIAL HOSPITAL IN BROOKLYN.—On the evening of February 5th there was a serious fire at the Memorial Hospital for Women and Children in Brooklyn, which broke out in the operating room. All the patients, however, were successfully removed to the nurses' dormitory. The hospital is a three-story frame building, and it will be some time before the damage inflicted can be repaired. A longer and more substantial building is now in process of construction, and funds are being raised for its completion.

TRANSFUSION OF BLOOD IN ASPHYXIA FROM ILLUMINATING GAS.—In the case of a woman asphyxiated with illuminating gas recently admitted to the Long Island College Hospital, Brooklyn, all other remedies having failed to relieve the patient, transfusion was resorted to, and the blood for the purpose was generously supplied by the house-surgeon, Dr. Franklin W. Kemp. There was some temporary improvement after the operation, but she died the following day. A young girl, seventeen years of age, who had slept in the same room with this patient and had also been overcome by the gas, was successfully treated by the ordinary means.

SMALL-POX.—During the week ending February 10th, 28 cases of small-pox were reported, with 9 deaths, against 22 cases and 4 deaths the previous week; and 594 cases of measles, with 19 deaths, against 554 and 20 deaths the previous week. The other contagious diseases showed a decrease. There were reported 129 cases of scarlet fever, with 16 deaths, against 151 cases and 20 deaths the previous week; diphtheria, 190 cases and 59 deaths, against 197 cases and 58 deaths. The total number of deaths in the city was 868, an increase of 20 on the week ending February 3d.

PHILADELPHIA.

PROTECTION OF WATER-SUPPLIES IN PENNSYLVANIA.—A conference of county and other local boards of health of the State of Pennsylvania was held at Harrisburg during the week ending January 29th. The preservation of the water-supplies of communities from pollution was discussed, and a resolution adopted pledging all boards of health in the commonwealth to do all in their power to prevent contamination of the inland waters of the State. In a paper read by the Health Officer of Philadelphia the work done by the

Woman's Health Protective Association in stimulating sanitary reforms, such as keeping streets clean, removing nuisances, and improved household hygiene was referred to in the highest terms of approbation. The communications read were generally of a very practical and useful character. It was decided to form a permanent organization, which is to hold annual meetings at Harrisburg. The name adopted is "The State Association of Health Authorities of Pennsylvania." All persons officially connected with boards of health of this commonwealth shall be members, and honorary members may be elected from those who have rendered distinguished services to sanitation. Committees on Legislation and on Publication were provided for, besides an Executive Committee. The following officers were elected for the ensuing year: President, Hon. Robert E. Pattison (the Governor of Pennsylvania). Vice-President, Major Moses Veale, Philadelphia; Hon. Thomas P. Merritt, Reading; J. H. McClelland, M.D., Pittsburgh. Secretary, Wm. B. Atkinson, M.D., Philadelphia. Treasurer, Jesse C. Green, M.D., West Chester. At the first session, Dr. Walter Wyman, Supervising Surgeon-General United States Marine-Hospital Service, and Dr. J. H. Rauch, of the Illinois State Board of Health, were elected honorary members of the Association. This recent development in public health work is principally due to the zeal of Dr. Benjamin Lee, the secretary of the State Board of Health.

Miscellaneous.

THE STUDY OF PEDIATRICS.

DR. W. S. CHRISTOPHER¹ makes an earnest plea for the more general and thorough study of the diseases of children. As it is the most immature department of clinical medicine, so it offers one of the richest fields of work for the student and pioneer. "Internal medicine," he says, "is taught almost universally from the standpoint of the adult, and pediatric manifestations of disease are only incidentally referred to. The consequence is that the new graduate is afraid of a baby, readily accepts the diagnosis of the grandmother, and not infrequently follows her treatment."

Another important factor in the retardation of the study of infantile disorders is the inherent difficulty of diagnosis. While the infant has not the power of speech, yet it does possess a very distinct and quite full language, the acquirement of which, however, demands faithful and persistent effort on the part of the practitioner. This language is quite as difficult to acquire as the manual skill needed in so many of the mechanical departments of the profession.

The foundation of the new work lies in the study and appreciation of the normal processes of growth, and of the development of functions which at birth and in infancy are so immature as practically to be non-existent. The anatomy and physiology of infancy and childhood are as much a part of pediatrics as is their pathology.

The great importance of environmental factors in

¹ American Journal of Obstetrics, January, 1894.

the child's development is to be borne in mind: both the nutritive, the sanitary and the psychic. All are to be considered. Infant-feeding is not the whole of pediatrics, though, from the clinician's standpoint, it is the most important single factor.

The advantage gained from this systematic study of disease in children is not the child's alone. Much light will be thrown upon disease as it occurs in adults, and a keener appreciation of many conditions will be possible. The study is important for the great light which it will shed upon the diseases of adults, for the better alleviation of the sufferings of the helpless little ones, and for the broader and nobler, because farther-reaching, purpose of improving the race.

SIR ANDREW CLARK ON OCCUPATION.

In the course of a most interesting lecture on the treatment of fibroid phthisis,¹ Sir Andrew Clark makes the following observations on occupation, which show clearly the peculiar quality which gave him his wonderful control over his patients. After speaking of the prime importance of proper food, clothing and exercise, he says:

"Another point about the management of those cases is occupation. If people are wonderfully well off in life, and a member of the family falls sick or becomes delicate, they are disposed to take him away from work on the ground that work is bad for him. I do not agree with them at all. I think that is about the biggest mistake that you will have to encounter. *Labor vita vita est.* Labor is the life of life; and especially is it the life of life to the delicate. And when any organ is sick it is then truer than in health that even in sickness and delicacy it is better for the organ to do what work of its own it can, provided it can do it without injury. And I can say to you from a considerable experience of tuberculous pulmonary disease, I can say with perfect confidence, that those who have done the best have usually been those who have occupied themselves the most. . . . Then comes tranquility of mind. Yes, labor is life, but worry is killing. It is bad management that kills people. I am frequently told that such and such a man has overworked himself. Nature will let no man overwork himself unless he plays her false—takes stimulants at irregular times, smokes too much or takes opium. If he is regular and obeys the laws of health and walks in the way of physiological righteousness, nature will never allow him or any person to work too much. I have never yet seen a case of breaking down from mere overwork alone; but I admit that it is necessary above all things to cultivate tranquility of mind. Try to help your patients to exercise their wills in regard to this, for wills count for something in securing tranquility—to accept things as they are, and not to bother about yesterday, which is gone forever; not to bother about to-morrow, which is not theirs; but to take the present day and make the best of it. Those affectionate women who will continually peer into what lies beyond never have any present life at all—they are always grizzling over the past or prying into the future; and this blessed to-day, which is all that we are sure of, they never have."

¹ Lancet, January 6, 1894.

Correspondence.

THE VERMIFORM APPENDIX.

CLINTON, IOWA, February 10, 1894.

MR. EDITOR:—Recent articles on appendicitis have suggested to my mind that if the vermiform appendix is of no use to its possessor from his birth to his death, it follows that its period of usefulness must have preceded his birth. In that case it must be a remnant of the umbilical cord, and should have been removed at birth, as is the custom, beyond a doubt, among the brute creation. The depression of the human navel, as compared with the smooth cicatrix of the brute, indicates a different condition of the interior of the abdomen of the one as compared with that of the other.

My belief that animals remove this from the body of their young at birth, rests on the fact that I have witnessed the operation. Over a dozen years ago I befriended a little female dog in her hour of travail, and, instead of concealing, she seemed to take pains to make evident to me what services she rendered her young. Cautiously, with the points of her teeth, she made an incision around the umbilical cord about an inch from the body. This incision disclosed an inner membrane sheathed within the outer one. Grasping this inner membrane with her teeth and pushing with her forepaws on the little body, she pulled vigorously at the membrane, withdrawing quite a quantity through the umbilical orifice and out of the body of the pup. When she had removed all that would yield to her efforts, she bit it off and carefully and neatly chewed together the severed edges of the part that remained. Then commencing at the hind quarters of the little thing, which was lying limp and helpless, she gave it a vigorous licking with her tongue. Every sweep of her tongue seemed to give it life, and also to raise it slightly, when it would fall back again. She persevered and soon had it nearly upright, standing on its head and shoulders; but she did not leave it till she had thoroughly licked it all over and had brushed every hair into its proper place.

I have reason to believe that this custom prevails among all animals, though they perform the operation in a manner to defy the curiosity of man. The instinct of the brute prompts her to devour ravenously, everything ejected with her young. Having consumed all that is visible, she pursues the invisible, which she extracts by suction, while ostensibly she is merely licking her offspring. The ripples that pass through the little one, and the contortions it involuntarily undergoes, testify, however, to some change which is occurring within, such as, possibly, the removal of a separate tissue enveloping each individual organ.

If, as the Scripture teaches, our first parents were created, not born, and created in the image of One who was not born, there could be no *raison d'être* for a navel. On the other hand, if mankind is an evolution from the animal, why did his reason bid him discard a practice which he had followed with success as a brute? We seem to hold a chain which stretches back, link by link, through past generations, till we reach a point coeval with the Fall of Man. Is it a cause or a result?

Looking forward, however, what might be the result if man would learn of Nature from the brutes around him? To the infant, immunity from pain, a life as healthy as any little animal; to the woman, a vast decrease in the pains of gestation and parturition; to mankind at large, less liability to hereditary disease and a freedom hitherto unknown from those unnatural appetites which sink man below the level of the brute, and lead to insanity and suicide.

Certainly, the subject is well worthy of investigation; and the solution of the problem would tend to raise man to a plane far above his present level; and the generations of the future, by avoiding the mistakes of their forefathers, would attain the perfect type of the human form divine.

Very truly yours,

MARGARET C. HAYES.

METEOROLOGICAL RECORD.

For the week ending February 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S...23	30.38	26	32	19	60	56	58	W.	W.	10	8	C.	C.
M...28	30.10	28	36	19	73	100	86	N.W.	N.E.	5	5	C.	C.
T...30	29.08	31	38	23	100	70	85	N.W.	W.	17	25	C.	C.
W...31	29.88	32	38	25	60	60	60	N.W.	W.	15	13	C.	C.
T...1	29.86	27	30	23	60	60	60	N.	N.W.	9	8	C.	C.
F...2	30.17	23	30	16	83	47	65	W.	S.W.	10	10	C.	C.
S...3	29.80	23	41	23	81	60	70	S.	W.	12	9	O.	O.
													0.36
													0.74

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. 32° Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 3, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.	
New York	1,891,306	848	344	19.08	21.00	8.52	2.40	3.36	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	462	144	9.90	20.24	5.60	.66	.44	
Brooklyn	978,394	396	163	12.25	25.25	8.00	1.50	.50	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	240	59	12.15	22.05	7.20	1.86	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	85	35	11.55	19.95	6.36	—	1.05	
Cincinnati	305,000	115	42	10.44	24.38	3.48	—	—	
Cleveland	290,000	87	23	13.09	15.47	5.95	—	1.19	
Pittsburg	283,709	87	41	20.23	—	5.95	9.52	—	
Milwaukee	250,000	83	42	22.80	13.20	9.60	1.20	4.80	
Nashville	87,754	25	9	—	20.00	—	—	—	
Charleston	85,165	37	13	5.40	28.80	—	2.70	—	
Portland	40,000	14	3	—	7.14	—	—	—	
Worcester	96,217	31	13	19.36	25.44	16.15	—	—	
Fall River	87,411	31	11	9.99	32.30	—	3.23	—	
Lowell	87,191	35	8	17.10	14.25	—	—	2.85	
Cambridge	77,100	37	10	—	32.40	—	—	—	
Lynn	62,656	14	0	7.14	7.14	—	—	—	
Springfield	48,684	17	2	5.8	17.64	—	—	—	
Lawrence	46,355	10	0	10.00	—	—	10.00	—	
New Bedford	45,886	19	5	5.28	21.04	—	—	—	
Holyoke	41,278	8	3	12.50	20.10	—	—	—	
Salem	32,233	14	4	21.42	21.42	—	—	—	
Brookton	32,140	7	0	14.8	14.28	—	—	—	
Haverhill	31,398	12	1	15.65	8.33	15.68	—	—	
Chelsea	30,264	7	0	14.28	14.28	—	—	—	
Malden	29,394	5	1	—	—	—	—	—	
Newton	27,556	12	2	16.66	8.33	16.66	—	—	
Fitchburg	27,146	—	—	—	—	—	—	—	
Taunton	26,972	17	2	—	29.40	—	—	—	
Gloucester	26,688	10	4	20.00	—	20.00	—	—	
Waltham	22,068	0	0	—	—	—	—	—	
Quincy	19,642	6	3	—	—	—	—	—	
Pittsfield	18,402	2	0	—	—	—	—	—	
Everett	16,545	5	1	—	20.00	—	—	—	
Northampton	16,331	5	1	—	20.00	—	—	—	
Newburyport	14,073	6	2	16.66	16.66	—	—	—	
Amesbury	10,920	2	1	50.00	—	—	—	—	

Deaths reported 2,811: under five years of age 1,090; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 377, acute lung diseases 467, consumption 300, diphtheria and croup 190, scarlet fever 47, measles 39, typhoid fever 28, diarrhoeal diseases 26, cerebro-spinal meningitis 18, whooping-cough 18, erysipelas 10, small-pox 6.

From typhoid fever Philadelphia 6, New York, Cincinnati and Lowell 4 each, Brooklyn 3, Cleveland and Pittsburgh 2 each, Boston, Milwaukee and Springfield 1 each. From diarrhoeal diseases New York, 13, Cincinnati 4, Brooklyn and Milwaukee 3 each, Charleston, Fall River and Somerville 1 each. From cerebro-spinal meningitis New York 8, Cleveland 2, Brooklyn, Washington, Worcester, Lynn, Holyoke, Chelsea and Amesbury 1 each. From whooping-cough Boston 4, New York and Washington 3 each, Philadelphia and Milwaukee 2 each, Cincinnati,

Cleveland and Fall River 1 each. From erysipelas New York 5, Philadelphia 2, Boston, Pittsburgh and Lowell 1 each. From small-pox New York 4, Brooklyn and Boston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending January 27th, the death-rate was 20.7. Deaths reported 4,156; acute diseases of the respiratory organs (London) 422, whooping-cough 192, diphtheria 80, measles 73, fever 42, diarrhoea 42, scarlet fever 35, small-pox (Birmingham 7, Bradford 3, Bristol 2, London, Nottingham, Liverpool and Halifax 1 each) 16.

The death-rates ranged from 14.8 in Derby to 31.1 in Norwich; Birmingham 25.8, Bradford 19.6, Croydon 17.7, Halifax 18.5, Hull 18.6, Leeds 18.8, Leicester 14.9, Liverpool 24.6, London 19.8, Manchester 23.8, Newcastle-on-Tyne 19.9, Nottingham 18.9, Portsmouth 16.8, Salford 30.1, Sheffield 19.7, Sunderland 16.5, West Ham 16.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 3, 1894, TO FEBRUARY 9, 1894.

The following named officers of the medical department are relieved from duty in this city, to take effect upon the completion of the present course of instruction at the Army Medical School, and are assigned to duty at the stations hereinafter designated: FIRST-LIEUT. WILLIAM W. QUINTON, assistant surgeon, Fort Riley, Kansas; FIRST-LIEUT. THOMAS S. BRATTON, assistant surgeon, Fort Niobrara, Nebraska; FIRST-LIEUT. DRANE C. HOWARD, assistant surgeon, Fort Buford, North Dakota; FIRST-LIEUT. ALEXANDER S. PORTER, assistant surgeon, Fort Keogh, Montana; FIRST-LIEUT. WILLIAM H. WILSON, assistant surgeon, Fort Leavenworth, Kansas.

Leave of absence for two months, with permission to go beyond sea, is granted MAJOR ROBERT M. O'REILLY, surgeon, U. S. A.

FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, is relieved from duty at Fort Leavenworth, Kansas, to take effect upon the arrival of FIRST-LIEUT. WM. H. WILSON, assistant surgeon, at that post and ordered to Camp Pitot, Butte, Wyoming, for duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 10, 1894.

FRANK C. COOK, assistant surgeon, ordered to the Naval Laboratory and Department of Instruction, New York.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, February 21st, at 8 o'clock.

Papers: Dr. D. D. Gilbert, of Dorchester, will give the report of a committee appointed by the Norfolk District Medical Society, to investigate the production of "Vaccine Virus."

Dr. A. P. Chadbourne will read on "Fibroid Phthisis."

F. C. SHATTUCK, M.D., Chairman.
HENRY JACKSON, M.D., Secretary.

RECENT DEATH.

THEODOR BILLROTH, M.D., professor of surgery in the University of Vienna, died at Abbazia, in Austria, February 6th, aged sixty-four years. He was born on the Island of Rugen, in the Baltic, and received his education in arts and medicine at Göttingen, Berlin and Vienna. In 1855 he was assistant to Langenbeck at the clinic. In 1859 he was made professor at Zurich, but returned to Vienna in 1867 where he has since remained. During the Franco-Prussian War he had charge of the military hospitals on the Rhine. In 1881 he performed successfully the first operation of pylorotomy for cancer of the stomach. Of his numerous writings his work on "Surgical Pathology" is probably the best known.

BOOKS AND PAMPHLETS RECEIVED.

Anger; An Analysis of the Words of Jesus Christ Concerning Anger, as Given in the Sermon on the Mount. By Aaron M. Crane, Boston.

Trephining in Its Ancient and Modern Aspect. By John Fletcher Horne, M.D., D.Sc. (Hon.), F.R.C.S., Ed. London: John Bale & Sons. 1894.

Treatment of the Diseases of the Stomach and Intestines. By Dr. Albert Mathieu, Physician to the Paris Hospitals. New York: William Wood & Co. 1894.

Original Articles.

FOUR CASES OF MYXŒDEMA TREATED BY THYROID EXTRACT.

BY FREDERICK C. SHATTUCK, M.D.

THE evolution of our knowledge of the functions of the thyroid gland and the interdependence of atrophy of the gland and the disease which, following Ord, we call myxœdema, will constitute, I think, one of the most interesting chapters of the medical history of our time. Cretinism, endemic and sporadic, had long been known when the late Sir William Gull, just twenty years ago, published his paper on "A Cretinoid State Supervening in Adult Life in Women." The next important step was taken when the Swiss surgeons, Kocher and Reverdin, recognized the identity in symptoms of the cases described by Gull and certain cases in which total extirpation of the thyroid gland for goitre had been practised. Then came the confirmatory experimental evidence derived from extirpation in animals, notably dogs and monkeys, and complete demonstration that the thyroid gland plays an extremely important rôle in the economy, profoundly influencing the nutrition of the central nervous system, and through it of the skin and its appendages in particular. Antiseptic surgery rendered the next step possible — the transplantation of the thyroid gland. Temporary improvement followed this procedure: but it was only temporary, as a rule, inasmuch as the gland underwent absorption instead of rooting itself and persisting as such. The disease thus remained of great clinical and pathological interest, but was considered practically not amenable to treatment. For instance, Osler's "Practice of Medicine," the prefatory note of which bears the date January 1, 1892, says: "Unfortunately, no satisfactory treatment is known. The patients suffer in cold and improve gradually in warm weather; they should therefore be kept at an even temperature and should, if possible, move to a warm climate in the winter months." How differently would this passage have been worded January 1, 1893!

To Dr. George Murray, of Newcastle, England, belongs the credit of the practical introduction of our present brilliantly successful treatment. In 1891, he began the hypodermic injection of a glycerine extract of the sheep's thyroid. The obvious dangers and inconveniences of this method led to the attempt to attain the same good results by the feeding of the raw gland, finely minced, to myxœdematous patients. *Mirabile dictu*, gastric and intestinal digestion were found not to impair the efficacy of the gland, and it was proved to be still active even when moderately cooked. Under these circumstances it is not to be wondered at that dried or liquid extracts of the gland, which offer convenient modes of administration, are found to be thoroughly effective. We are still much in the dark as to exactly what the gland does in the economy and how it does it, and we must probably look to physiological chemistry for the answer to these questions. The interest of the subject is so great that I have not been able to refrain from these introductory remarks to a brief report of four cases in private practice which I have thus far treated by thyroid extracts.

CASE I. This is, as far as I know, the first thus treated in this country, and presents some points of

special interest. Miss A, twenty-nine years old, first consulted me April 21, 1892. Her maternal great-grandmother and great-aunt and her paternal grandmother died of cancer; otherwise the family history is unimportant. The catamenia appeared during the thirteenth year, and were regular. She was well until she reached the age of seventeen, when she left school on account of frontal headache and nervousness. For the next five or six years she was anæmic and lacked strength. The catamenia diminished in amount and she had leucorrhœa; but she did much as other girls, nevertheless, and was fond of dancing, in which she excelled. In 1885, much arsenic was found in the cretonne and wall-paper of her room. These articles were removed, and she improved somewhat; but remained physically below par. In October, 1890, she took carbonate-of-iron pills, and by January 1, 1891, considered herself perfectly well. In January, 1891, normal menstruation appeared; February was skipped; in March, May and June there was a slight flow; but the period has been entirely absent ever since, nor has there been any return of the leucorrhœa. In February, 1891, she began to gain weight, and since then had put on twenty pounds, especially about the face and bust. The complexion, which was formerly fair and delicate, had become coarse and red, and her appearance had so changed that she was often not recognized. Within a few months the palms of the hands in particular, but also the soles of the feet and portions of the integument covering the neck and trunk, had acquired a peculiar yellow color. This could also be detected on the mucous membrane of the inner surface of the lips. The skin was generally rather coarse and rough, but was deeply fissured and cracked toward the finger-tips. The coloration of the fingers, combined with the roughness, led Dr. Osler, who saw her with me, to compare the skin to the covering of a goose's foot. The nails were brittle and uneven, the hair thin and dry. The patient herself questioned whether the color of the fingers could be attributed to oranges, of which she had eaten many of late; but she observed that she could not wash or scrub the color off, and that it did not disappear when she temporarily omitted this fruit. She stated that three years ago, and several times since, she had awaked in the morning to find blisters (herpes?) on her nose. Lately she had had two small red bunches on her eyelids. One was removed by Dr. Cheney; the other disappeared spontaneously. Later she had another which I saw, and which looked like a sty, though it did not suppurate. Within two years a vaginal examination had been made by a competent hand, which discovered nothing amiss. In past years she had consulted specialists for her hair, and a throat specialist, and had been under the care of several physicians one after another.

Visceral examination was negative and the temperature normal. There was no mental or physical sluggishness; indeed, subsequent evidence would suggest that she was at this time mentally elated rather than depressed or indifferent. She was not strong; but complained chiefly of her changed appearance, coarse complexion and unevenly distributed gain in flesh. Perspiration was slight or absent. Her appetite was very large, digestion good, but sleep very poor, not more than four hours a night. I examined the blood, though I made no regular count, nor did I estimate the hæmoglobin. I considered it practically normal

¹ Read before the Boston Society for Medical Improvement, December 11, 1893.

as did Dr. Osler some weeks later. The urine was normal in amount and not very significant. It contained constantly a very faint trace of albumen, uric-acid crystals, once a few hyaline casts, and a trace of arsenic ("A small trace in comparison with most cases of arsenical poisoning," Dr. Wood reported to me). Supraclavicular pads were present.

Suspecting myxœdema, though the case differed decidedly from those I had seen or read of previously, I sent her to Dr. J. J. Putnam, providing that he should not know my opinion before he stated his own. He was inclined to call it obesity with menstrual disturbance, rather than myxœdema. A few weeks later Dr. Osler saw her, and concurred in my diagnosis. I then began injections of a glycerine extract of sheep's thyroid prepared for me with every precaution by Dr. A. C. Jelly, who visited the abattoir weekly himself, and kindly took infinite pains, thanks to which no undesirable local symptom was ever produced. The extract obtained from one gland was injected every week in three doses for about three months by myself and Dr. Charles Folsom, who kindly assumed charge of her during my vacation.

For the last year she has not been under my care, as she lives out of town and has been unable to come in. During this year she has taken the dried extract of Parke, Davis & Co., and is now taking the New York glycerine extract by the mouth. At first, there was improvement in the condition of the skin, but I now believe that was attributable to the warm weather rather than to the treatment, which has been of no real benefit to her. About the middle of May an ecchymosis appeared on the right thigh as large as a small lemon. She had received no blow or injury so far as she knew, and the injections were all made in the back. In August, 1892, she began to be depressed mentally, and several times tried to end her life; indeed, for the last year she has been watched incessantly. The chief effects attributable to the thyroid administration seem to be loss of flesh, strength and appetite. A number of months ago a swelling near the left angle of the jaw appeared and discharged pus.

Dr. Cutler, of Waltham, under whose care she now is, kindly writes me that the left cheek is riddled with sinuses, and new abscesses occasionally form. He also says: "There is no violence, and apparently no hallucination or delusion, unless it may be a delusion when she says she cannot possibly move while almost in the act of walking. She is much depressed, and indeed quite desperate often, for she is certain she shall never be better. She has an intense præcordial distress often, which I judge to be the præcordial pain of melancholia. The hair is still falling, but new is growing. The skin and nails are still dry and rough. Speech is slow, but perfectly rational. She probably still retains her suicidal inclination, but does not manifest it in any way except in an occasional doubtful word."

Her mother writes under date of December 8, 1893: "There are black and blue marks on her legs, which, indeed, are so thin that they look like two sticks. Her face is swollen, also her waist, but the chest is hollow. The eyelids are swollen; the eyeballs often protrude. Her weight, which was 135 pounds when she first consulted you, is now less than 99. The under eye-lashes have gone. In July, 1892, her bust measured 40 inches; in October, 1893, 36 inches. In

July, 1892, her waist measured 33 inches; in October, 1893, 29 inches."

I permit myself a few remarks on this case here, as it is sharply contrasted with the others which I am about to report. I confess that the failure of the appropriate treatment is a point against the correctness of the diagnosis of myxœdema in this case. If it be not myxœdema, I am at a loss what to call it. Dr. Mitchell Clark² reports two cases of failure, the only two I have been able to find in which treatment has been ineffectual. The treatment lasted two months and six weeks respectively. The use of these different thyroid preparations in my case, one after another, shows that the failure is not attributable to inertness of the remedy.

CASE II. Mr. B., sixty-nine years of age, consulted me first March 26, 1893. He has had many attacks of rheumatic iritis, and been quite deaf for a number of years. He at first dated his symptoms from about December, declaring that he had been perfectly well the previous summer. Later he, and especially his wife, felt sure that the symptoms were of older date, and had been gradually coming on for at least a year, though more rapidly of late. He said he was suffering from "a dropsical tendency," and wished relief for two symptoms,—a nearly constant watering of the eyes and serous running from the nose, and an unsatisfactory condition of the bowels which moved once daily, the dejections being small and watery. I found that he was notably weak, so much so that he had not for some weeks made his accustomed daily visit to his club, only a few steps from the house. He had become very sensitive to cold, and would sit before the fire with his feet in a foot-muff and in a temperature of the room which was trying to his family. A sensation as if the lining membrane of his mouth and throat were swollen was also mentioned. Perspiration was absent. The skin of the hands was very dry and rough, the nails brittle; and he said his hands felt stiff when trying to grasp anything. The integument generally was dry and harsh, though far less so than the hands, and his skin had previously been unusually soft and smooth. There was pallor of the face and slight puffiness about the eyes and cheeks, suggestive of Bright's disease except for a translucency of the little folds and wrinkles revealed by close examination. The lips seemed swollen, and the lower was everted and somewhat pendulous. There was slight œdema of the ankles. His wife had noticed no mental change. Supraclavicular pads were not marked. In the median line of the neck, extending for perhaps two inches above the thyroid cartilage, was a scar, the result of an operation for the removal of a tumor by Dr. Hodges some twelve years ago. Dr. Hodges states that this was a deep-seated lipoma. The texture, color and thickness of the hair had shown no change; pulse 64; temperature 97.5; and the temperature was subnormal whenever taken during the few days which elapsed before treatment was begun. Physical examination, including the blood, gave negative results except as above stated and hæmoglobin 60 per cent. The urine was only 740 c. c. in twenty-four hours; specific gravity 1.020; albumen very faint trace; urea nineteen grammes to the litre; sugar absent; a few medium-sized hyaline casts and abnormal blood corpuscles.

The signs and symptoms seemed to me the same in

² British Medical Journal, August 27, 1892, p. 451.

character as those of myxœdema, though they were less in degree than in any case which I had ever seen or read of; and I had no hesitation in making this diagnosis, in which Dr. J. J. Putnam concurred. Dr. Putnam was so kind as to let me have some of Parke, Davis & Co.'s dried extract of thyroid gland, which had not yet been put on the market; and from April 1st to April 5th, inclusive, fifteen grains, the equivalent of one lobe of a sheep's thyroid, were given twice daily. April 6th, fifteen grains were given once. Before April 6th he complained of pains in the limbs and back. April 10th, seven and a half grains once. The remedy was then omitted until May 5th. After dinner on the evening of April 10th, I was sent for, and found him with severe pain in the cardiac region, resembling that of angina, with quick pulse and temperature slightly above normal. Morphia was given under the skin. For the next two to three weeks now he kept his bed. The attacks of pain tended to recur toward evening, and were always accompanied by marked increase in the pulse-rate, though irregularity and intermittency were never observed. With the subsidence of the pain, either spontaneously or after morphia, the rate promptly fell again. Nitroglycerine had no control over the pain. Repeated and most careful examination of the heart itself failed to detect any change in the size and sounds. He is a courageous man, whose iritic attacks have taught him what pain is, and he is reasonably tolerant of it; but this anginoid pain was so severe as to necessitate morphia hypodermically in one-half-grain doses. Two nights, at least, four of these were required to give relative comfort. The whole cardiac area was tender to pressure or touch, and a very limited spot just outside of the left nipple was exquisitely so. The necessity for hypodermics ceased April 28th. Gradually the attacks of pain diminished and disappeared; as did the tenderness, though more slowly. Meantime the myxœdematous symptoms showed marked improvement. The urine more than doubled in quantity, and April 13th was 1,028 specific gravity, with a very faint trace of albumen and forty-six grammes of urea to the litre, the sediment remaining the same. As he lay in bed now, he kept his arms out, covered only by his night-shirt, and desired only a sheet and one blanket as covering instead of a thick layer as before treatment. Desquamation took place as freely as after scarlet fever, affording the patient much occupation. The skin came off a toe like the finger of a glove. The watering of the eyes and running at the nose diminished materially. May 5th, one-grain doses of the extract every second day were given; May 18th to June 8th, one grain daily; June 9th to July 5th, two grains daily; from July 6th to the present time, four to eight grains daily. In June he felt better than for a year or two, in fact, perfectly well; and he has since so remained, though with the advent of cold weather the symptoms seem inclined to return in a measure. He has been remarkably free from headaches, to which he was formerly much subject. His weight has not varied materially.

CASE III. Mrs. C, thirty-four years old, consulted me at my office in March, 1898. Her family history was good, except that an uncle was ill for years with "deathly pallor and bloating." The catamenia appeared at fourteen and were regular until her marriage at twenty. Ten months later she was confined, and has never since been pregnant. The catamenia have

recurred every five to seven months, painlessly and otherwise normal in every way. For at least ten years she has been notably pale, more or less "bloated," sensitive to cold, perspiring but little if at all, better summers than winters. Six years ago she was operated on for laceration of the cervix, with some subsequent gain in strength. Her urine, she thinks, has not been scanty. She has been supposed to have Bright's disease. She thinks her memory is less good than it was, but recognizes no other mental change. The facies was strongly suggestive of nephritis, but the urine was negative. Unfortunately the urea was not quantitated. There was some swelling of the legs without distinct pitting. Visceral and blood examination gave negative results. The temperature was normal. The skin and its appendages were not notably changed except for swelling and pallor. Supraclavicular pads not marked. At her first visit I was not inclined to think her the subject of myxœdema; but was led to reconsider the diagnosis after my observation of Case II, which came to me soon after. I therefore sent for her and gave her at first seven and a half grains of the dried extract every third day, after three weeks every second day. There was no unfavorable symptom except some palpitation; later, pains in the limbs were complained of, but they passed off entirely. Improvement was prompt, and has been very marked. The swelling of her face and her girth diminished. There was desquamation of the skin and increase in strength. Early in June she reported that she perspired as she had not done for a long time, and said that all her friends were congratulating her on her changed appearance. One grain of the extract was ordered thrice daily, and this dose has been maintained ever since. I saw her a few days ago; and she then said that she felt better than for years, and has regained her natural shape, though her weight has gone up nearly twenty pounds. Her dressmaker states that her neck measures one-half inch less, her bust three and a half inches less, than last winter. The swelling of the legs has disappeared. The flesh in general has become natural in consistency; there is color in the lips and cheeks. She volunteered the statement that last winter she was not comfortable if the temperature of the room was less than 80°; and now she objects to a temperature above 65°.

CASE IV. Mr. D., of Missouri, visiting friends in the East, was sent to me by Dr. Gage of Lowell, November 17, 1898; fifty-two years of age, banker. Until five years ago his occupation was a very active one; since then has been sedentary. Family history, previous history and habits good. He never had malaria. For the past two years he has been less strong. The past two winters his hands especially have been very rough, and he has not perspired. Last winter and spring his friends began to notice a change in his color and appearance. Rest and change of scene was advised; but the panic came, and he had to stay at home. He lost his appetite; bowels became constipated; sexual desire was lost. He was weak, and very sensitive to cold. Some weeks ago he left home and went to some iron springs and then came East. He has gained fifteen pounds in flesh, with increased appetite and strength since leaving home; but his hands and appearance do not change. His eyes water easily, and his tear-ducts were dilated last summer with some relief. His former weight was 205; present, 180. The face presented a dirty pallor, with

slightly puffy and translucent lids; no swelling of the lips. The skin generally was harsh, especially the hands and feet. The hair dry; supraclavicular pads marked; temperature 96.5°; pulse 60; heart sounds weak, otherwise not remarkable; lungs and abdomen clear; knee-jerks present. Blood negative except for diminished hæmoglobin. No enlarged glands; no œdema of the legs; feet objectively very cold. November 17th, the daily amount of urine was about 40 ounces; specific gravity 1.015; an accident prevented the estimation of urea. November 24th, specific gravity 1.020. November 29th, specific gravity 1.025; albumen slightest possible trace; a few casts. December 6th, specific gravity 1.027; albumen slightest possible trace; an occasional hyaline cast. The patient reports a distinct increase in the flow of urine, but the amount has not again been measured. One grain of the thyroid extract twice daily was ordered, and November 29th four grains a day. November 29th, temperature 97.5°; less watering at eyes; sweat some yesterday after exertion. Some pain and tenderness on right elbow. Increased thyroid extract to six grains a day. December 6th, pulse 72; temperature 97.4°; skin about the same; color better; less sensitive to cold; eyes distinctly less watery; is less hoarse than for six months, and sang last Sunday for the first time during that period. The duration of treatment in this case has been very short; but its results confirm the diagnosis. I have learned to push the remedy cautiously.

Cases II, III and IV are unquestionably cases of myxœdema, and can be added to the rapidly lengthening list of cures. Dr. Kinnicutt³ collected 49 cases up to May 1st, treated by thyroid extract; and Dr. R. C. Cabot has kindly collected 68 cases published since May 1st. As before stated, two showed no gain under the treatment. Two of Dr. Murray's⁴ died suddenly while under treatment, the symptoms having markedly improved. One was known, the other suspected to have an unsound heart. Dr. Cabot has found two other fatal cases. In one diarrhœa set in after the first dose, and death was speedy. In the other,⁵ figured in Plate III, in Byrom Bramwell's "Atlas of Clinical Medicine," marked improvement in the myxœdematous symptoms had taken place. January 6, 1892, the patient had an attack of angina, took the last dose, and died seventeen days later. Myocarditis was found at the autopsy. In the 68 cases collected by Dr. Cabot the only other untoward symptoms which occurred often enough to make them especially suggestive were: faintness and headache in six cases, nausea and vomiting in four cases, pain in the back in four cases.

There has been so much written on this subject of late, and it is so prominently before the profession, that I shall not go into statistics or any general consideration of the disease and its symptoms; but there are several points illustrated by my cases to which I wish to ask your indulgent attention.

In the first place, we must recognize the fact, that, as in all other ailments, there are here differences of degree. Naturally the extreme cases were the first to be recognized, and to these alone does the description as now laid down in the text-books closely apply.

Total inactivity or loss of the gland is one thing; partial inactivity or loss another. It is highly probable that the latter does not necessarily lead to the former; at all events, a long period of years may elapse before the mild passes into the fully developed disease. The symptoms in Case III were of ten or twelve years' duration; and yet I at first crossed out myxœdema in my differential diagnosis. Now that our attention is awakened and we are on the lookout for cases, I am convinced that we shall find them to be pretty common. Case IV, the mildest I have seen, I am sure I should not have recognized a year ago, although I was then watching for cases. Case II illustrates the power of the remedy and the dangers of overdosage. Dr. Putnam and I decided on the initial dose in that case, as he had been giving that dose for some time to another, but an extreme, case with great benefit and no untoward result. The anginoid attacks caused me great anxiety. I can now see that it was unwise to fail to appreciate therapeutically differences in degree and duration, but I did not see it then. It may be said in extenuation that knowledge of the safe dosage of the remedy was then very slight and that experience had to be gained. Similar anginoid attacks have been noticed by other observers, and constitute the most important untoward symptom likely to be encountered during treatment. Pains in the limbs and back have also been noticed in some cases, and were complained of by Case II before the appearance of the anginoid pain. They were also present in Case III, and the pain and tenderness of one elbow in Case IV may be of neuritic nature.

It seems probable that the use of the remedy must be persisted in through life, and that larger doses will be required during the cold than during the hot weather.

Diagnosis should seldom offer any special difficulty at present. Grave anæmias and Bright's disease are readily excluded, as a rule. I say, "as a rule"; for we must not forget Starr's⁶ case, which had been diagnosed as Bright's by eminent authorities and so treated for years. But the albumen and casts disappeared entirely under thyroid extract.

SECOND ATTACKS OF TYPHOID FEVER IN ADULTS, TWO CASES.¹

BY A. L. MASON, M.D.,
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OCCASIONALLY a patient with typhoid fever says that he has had it before; but on further inquiry this statement can rarely be verified, on account of the lapse of time and memory, and the absence of accurate data regarding the previous illness, the history, charts, etc. Therefore the two following cases, which came under my care during both the primary and the second attacks, with an interval of two years in each case, are recorded as being somewhat exceptional. In Case I, that of a nurse, it seems not improbable that the disease was conveyed to her directly by the patients she was nursing.

CASE I.—*First Attack.* Hospital nurse, aged twenty-four, after five days of prodromal malaise, September 7, 1890, was admitted to Dr. Rotch's service with typhoid fever. She came under my care October

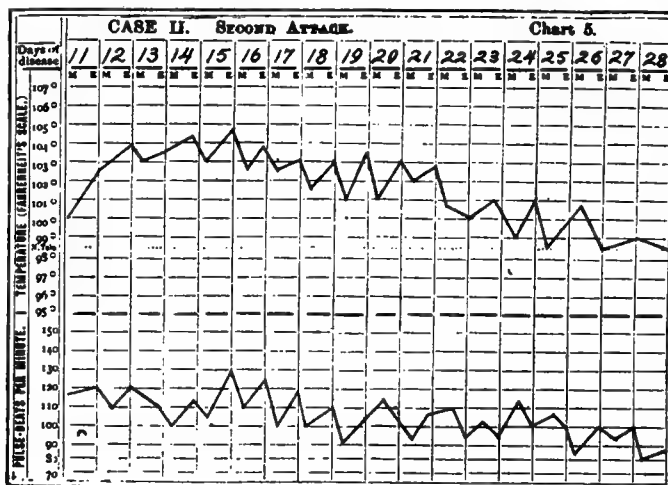
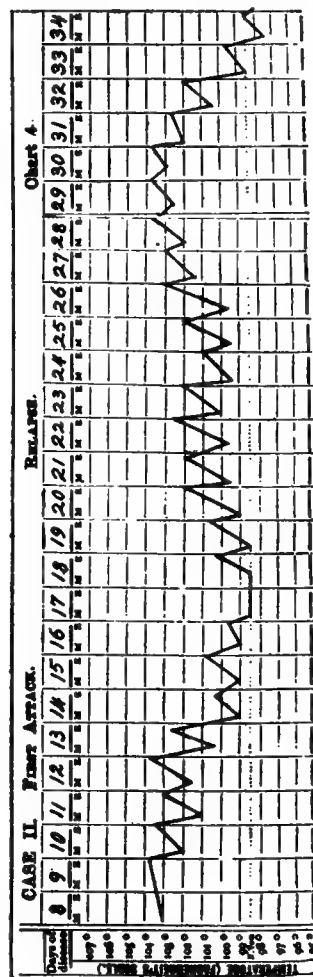
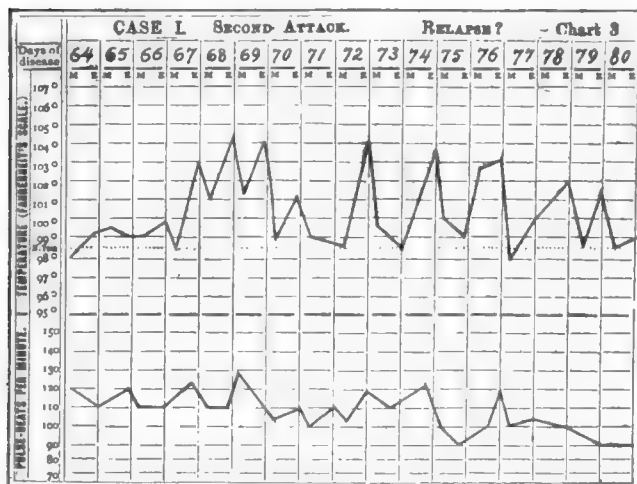
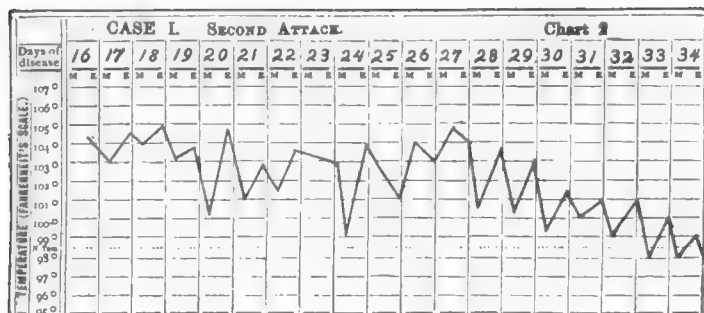
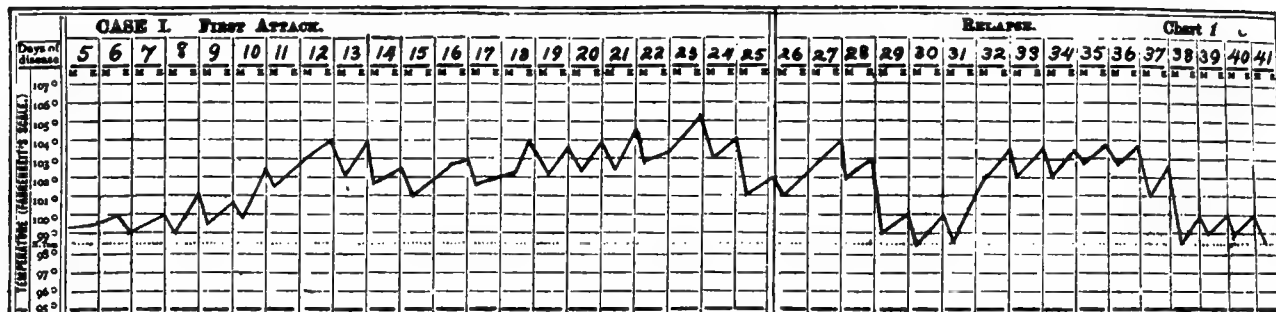
³ Transactions of the Association of American Physicians, vol. viii, 1893, p. 332.

⁴ British Medical Journal, 1892, ii, p. 430.

⁵ Edinburgh Medical Journal, May, 1893, p. 1014.

¹ From the forthcoming Medical and Surgical Report of the Boston City Hospital.

⁶ Transactions of Association of American Physicians, 1893.



it, in the later stages of a typical attack, which had been characterized by much abdominal pain and tympany, and was attended by a relapse, as is shown by the appended chart. During convalescence the pulse was high, 100 to 112, and she remained in hospital sixty-five days. (See Chart 1.)

CASE I.—Second Attack. October 10, 1892, the same patient was admitted to my service on the sixteenth day of her second attack. On the 23d of August she had gone to the country to nurse a patient with typhoid fever, and, after remaining there for a month in constant attendance, she contracted the disease herself. I saw her a few days later at home, when the symptoms were general malaise, insomnia, bad headache, fever and diarrhoea, but the knowledge of her severe attack two years before led me to doubt whether she had typhoid fever a second time. On admission to the hospital, rose-spots were abundant, the spleen was enlarged, anorexia and vomiting were troublesome. The urine was albuminous. The disease ran a longer course than before, defervescence taking place at the end of the fifth week, and the pulse then falling to 80. (Chart 2.) She got up on the fifty-seventh day, but from the sixty-fourth to the seventy-ninth day convalescence was interrupted by a recurrence of febrile symptoms and severe pain in the right iliac fossa, requiring morphia for relief. She left the hospital on the ninetieth day. (Chart 3.)

CASE II.—First Attack. A male cook, aged twenty-one, entered the service of Dr. Rotch, September 22, 1890. He had been ill ten days and complained of the usual prodromal symptoms of typhoid; malaise, pains in the limbs, headache, and nose-bleed. The bowels were constipated. In the second week splenic enlargement and rose-spots were noticeable; later the abdomen was swollen and tender. The fever abated at the end of the third week. As the patient appeared to be entering upon his convalescence, however, a relapse occurred which delayed his recovery for another month, and he remained in the hospital until the sixty-fourth day. (Chart 4.)

CASE II.—Second Attack. March 19, 1892, the same patient re-entered my service with a history of malaise and debility for the previous three weeks. He had lost his appetite, slept badly, and felt chilly and feverish by turns. Eight days before admission he gave up and went to bed. Epistaxis had been frequent. In the second week the symptoms were bronchitis, abdominal pain, splenic enlargement, and an abundant eruption of rose-spots. Diarrhoea ensued, with tympany; epistaxis recurred, and during the third week typhoidal stupor was very marked, as was also sensory deafness. There was no otitis. In the fourth week a laryngitis began and lasted two weeks. The right submaxillary gland became swollen to the size of an hen's egg, red and tender, but subsided without suppuration. During convalescence there was a peripheral neuritis affecting the feet and legs, and the patient was not discharged until the sixtieth day of his illness. There was no membrane in the throat at any time, and the laryngitis, glandular swellings, and neuritis were thought to be post-typhoidal. (Chart 5.)

Remarks.—The rare recurrence of typhoid fever in persons who are protected by a previous attack has been pointed out by many writers, but there is some difference of opinion as to the degree of immunity which is thus conveyed.

Nathan Smith, in his "Medical and Surgical Me-

moirs," says: "My own personal experience is strongly in favor of the non-liability of the same individual to a second attack of typhus; for during the twenty-five years since I first attended patients in this disease, and in that time I have visited many hundreds, and have witnessed its prevalence several times in the same village, I have never known nor heard of its recurrence in the same person."

This accords with the researches of Gendron in his "*Mémoire sur les épidémies des petites localités.*"² He mentions several instances of this immunity, among them the following: The village of Petit-Gênes had fifteen inhabitants, of whom twelve had typhoid fever. Of the three others two had had it before. Three years later, in a second epidemic, the disease attacked five persons only, who had come there since the previous outbreak.

Chomel, at the Hôtel Dieu, among one hundred and thirty typhoid patients, found no one who had previously had the disease.

On the other hand, Alonzo Clark, in his "*Lectures on Fevers,*"³ mentions two epidemics of typhoid as occurring in Richmond, Massachusetts, in which Dr. Jennings attended two patients with second attacks, of whom he had also taken care during their fevers two years before. Sixty persons were attacked in each epidemic, but no details of these cases are given.

Piedvache⁴ relates the case of a girl who had a severe attack at the age of ten, and a second one eight years later. Michel⁵ had met with three cases; and Paul,⁶ one in which a second attack occurred after three years.

Trousseau,⁷ with his long hospital experience, saw but one case at the Hôtel Dieu, where a woman under his care had typhoid four years after an attack of the same disease in the wards of Professor Rostan, where she had remained four months. Trousseau in his private practice also met with one case: a girl twelve years old took typhoid fever in a severe form. The illness lasted fifty-seven days. In the following year she had another characteristic attack fifty days in duration.

Liebermeister⁸ says that this disease confers a certain immunity, but not as complete as is the case with variola, measles and scarlet fever. He alludes to recurrent cases at the Basle Hospital, but gives no details.

Murchison (third edition, 1884) says: "It is generally believed that one attack of enteric fever confers an immunity from subsequent attacks." After recounting in brief the observations of Gendron, Piedvache, Bartlett, and others above-mentioned, he states that several cases had come under his notice in which two attacks had occurred in the same person after puberty, and that four similar cases were observed by Dr. William Budd (1859).

Strümpell's opinion (American edition, p. 4) is that "it does seem to be certain that the occurrence of typhoid fever gives very probable though not absolute immunity against any later new attack."

Pepper, in "The American Text-Book of Theory and Practice,"⁹ states that he has attended several patients through two characteristic attacks of typhoid

² *Journal des Connaissances Médico-Chirurgicales.* Par M. Gendron, 1834.

³ *New York Medical Record*, vol. xiii, 1878.

⁴ *Piedvache*, p. 103, 1850.

⁵ *Michel*, p. 297, 1859.

⁶ *Paul*: *L'Union Médicale*, 1870, 1, 587.

⁷ *Trousseau*, vol. iii, p. 50. Sydenham translation.

⁸ *Ziemssen's Cyclopædia*, vol. i, p. 75.

⁹ *Ibid.*, vol. i, p. 165, 1893.

fever, and has had more than one apparently reliable account of three distinct attacks at intervals of several years. The same author says that a study of six hundred cases by Eichhorst showed the occurrence of a second attack twenty-eight times, or in 4.7 per cent.; and that recurrences are more common in men than in women, and milder than the original attacks.

Moore, of Dublin, in his recent work on "Eruptive and Continued Fevers,"¹⁰ gives a "Case of Recurrent Enteric Fever followed by Relapse," in full detail, with charts of both attacks, and also contributes a report of the same case to the *Dublin Journal of Medical Science*, April, 1892.

From the foregoing citations and cases, it appears probable that physicians who see many cases of typhoid fever may, in the course of years, meet with a few recurrent attacks in their own practice. Therefore I made inquiry on this point of most of my past and present colleagues at the City Hospital, who have all had exceptionally large experience in this disease. The mere statements of patients that they had had typhoid fever more than once were not regarded as sufficiently conclusive, but cases corroborated by records, charts, or the remembrance of professional observation, were sought for. None were found.

Dr. Robert T. Edes, who paid much attention to this disease, and whose paper on "The Cold Water Treatment of Typhoid Fever," by bathing, appeared in the *City Hospital Reports*, Second Series, 1877, replied to my inquiry as follows: "I do not think I ever saw a case of typhoid fever in a person who, to my knowledge, had had it some months or years before."

Dr. C. Ellery Stedman, whose published "Notes on Typhoid," based on an analysis of 1,188 cases at the City Hospital, are contained in the "Reports," Third Series, 1882, answered that he had "formed the opinion that one seldom had the fever, *really*, twice." He had no proofs of recurrent attacks, in the way of charts and records.

Dr. C. F. Folsom writes: "I have never seen recurrent typhoid fever which I knew to be such. A few patients stated that they were suffering from second or recurrent attacks."

Dr. T. M. Rotch says: "I do not recollect any cases of recurrent typhoid."

Replies of similar tenor were received from Drs. J. G. Blake, Geo. B. Shattuck, E. J. Forster, and other members of the hospital staff with long experience. In an analysis of 676 cases of typhoid admitted to the hospital in 1890 and 1891, after careful examination of the records, I found no recurrent cases.¹¹

Therefore the two instances recorded above, with their histories and charts, are the only ones I have been able to verify, as having occurred in this hospital, in which the same patient has been admitted twice for typhoid fever. One other case came within my own knowledge in which a recurrent attack was fatal after an interval of thirty years.

Although the negative results of such an inquiry must be to some degree inconclusive, and a few authenticated cases indicate the probability of a still greater number which fail of positive proof, I think it may be assumed that the immunity afforded by an attack of typhoid fever is as complete as in the case of the exanthemata, except, perhaps, small-pox, in which it is said

that less than one per cent. of recurrences occur,¹² although Sir Thomas Watson states that a few instances are recorded of three attacks of this disease in the same person.¹³

A BACTERIOLOGICAL STUDY OF FOUR HUNDRED CASES OF INFLAMMATION OF THE THROAT, OCCURRING IN DIPHTHERIA AND SCARLET FEVER, WITH ESPECIAL REFERENCE TO PATHOGENESIS.¹

BY JOHN LOVETT MORSE, A.M., M.D.

(Concluded from No. 7, page 156.)

MIXED INFECTIONS.

The pseudo-membranous inflammations of the throat occurring in scarlet fever are always accompanied by cocci, usually streptococci. The presence of the Klebs-Löffler bacillus, means association with diphtheria as the result of a mixed infection. Janson (28) in seventeen cases of scarlet fever found streptococci alone or associated with other cocci. Baginsky (11) did not find the Klebs-Löffler bacillus in scarlet fever, and thinks that it disappears in cases of diphtheria when an eruption similar to the scarlatinal fever is developed and gives place to cocci. Park (13) found streptococci in seventeen cases of scarlet fever, and Sorenson (18) in thirteen cases of scarlatinal diphtheria found cocci and other organisms, but never Klebs-Löffler bacilli. Booker (19) has made a special study of the forms of cocci found in the scarlatinal pseudo-membranous angina, but does not find the Klebs-Löffler bacillus in them. Escherich and Bourges, however, have found them in the throat affections appearing in the course of scarlet fever.

In ninety-nine cases of scarlet fever with simultaneous pseudo-membranous inflammation of the throat, the following bacteria were found:

	Cases.
Klebs-Löffler bacilli alone	3
K. L. and streptococci	1
K. L. and staphylococci	10
K. L. and streptococci and staphylococci	9
Streptococci alone	4
Staphylococci alone	12
Streptococci and staphylococci	23
Streptococci, staphylococci and others	34
Other bacteria	3

That is, there were twenty-three cases of mixed infection, or nearly twenty-five per cent. Streptococci were present, alone or associated, in seventy-one cases, or in seventy-one per cent.

This tremendous proportion of cases of mixed infection can be accounted for in a number of ways. In the first place, the scarlet fever and diphtheria wards, although isolated from the rest of the hospital, are in charge of the same house-officers and visiting physicians. They are constantly going from one ward to another, and, although always wearing gowns in the wards and disinfecting their hands on leaving a ward, are probably responsible for a large number of the mixed forms. Various other persons, not directly connected with the care of the patients, also enter both

¹ A contribution, under direction of Dr. W. T. Councilman, from the Pathological Department to the forthcoming Medical and Surgical Report of the Boston City Hospital. Awarded one of the Lyman prizes for 1893.

¹⁰ See Reynolds' System of Medicine, vol. 1, p. 139.

¹² Watson's Principles and Practice of Physic, vol. II, p. 734, 4th edition, 1857.

¹¹ Moore, p. 351, Wm. Wood & Co., 1892.

¹² See Boston Medical and Surgical Journal, April 7 and 14, 1892.

wards. The possibility of the direct infection with Klebs-Löffler bacillus by physicians, nurses, and convalescent patients must also be considered, as it is undoubtedly a fact that a person with a very slight sore throat, without visible membrane, due nevertheless to the Klebs-Löffler bacillus, may infect others with a severe form of the disease. It is also a fact that the bacillus remains for a long time in the throats of convalescent patients, retaining its virulence, and rendering them a source of danger to others. Escherich (17) found the virulent diphtheria bacilli in cases in which the clinical picture of diphtheria was wanting. He thinks that these persons are immune towards the toxin, while there is no limitation to the growth of the bacillus. In one case a nurse in a hospital had the bacilli in her throat and, without being diseased herself, gave the disease to the children intrusted to her care. Feer (20) reports five cases in children in which the diphtheria bacilli were found on the tonsils without there being a trace of membrane. Koplick (14) has also proven the existence of similar cases. A certain number enter the hospital with a mixed infection, as is shown by bacteriological examination. As there is at present no separate ward for such cases, they are necessarily placed in one of the present wards. Although they are isolated as far as possible in separate rooms, they are undoubtedly the source of a certain number of other mixed cases. I think, moreover, that the diagnosis of scarlet fever is often made on insufficient grounds. The existence of scarlatiniform rashes and erythema fugax in diphtheria is well recognized (21 and 22). Steam and rough clothing next to the skin are also very likely to cause an erythema, which is often quite lasting. Drug exanthems may also give rise to error. These mistakes in diagnosis are especially liable to occur in cases which survive but a short time, thus not allowing opportunity for the recognition of the fleeting nature of the eruption. That these mixed cases do originate in the hospital is shown by the fact that during the period covered by this study sixteen cases developed scarlet fever in the hospital at an average time of nearly two weeks after entrance. Moreover, seven cases of scarlet fever developed inflamed throats during convalescence, in all of which the Klebs-Löffler bacilli were then demonstrated, although they had been absent previously. Under the present conditions these secondary infections are unavoidable, although every possible precaution is taken to prevent them. With the completion of the new wards for contagious diseases, however, which are now in process of erection, the conditions will be radically improved and all opportunity for such cases removed.

BACTERIA OF THE HUMAN MOUTH.

Very extended researches (34) have been made with reference to the bacteria in the human mouth, which show that numerous species are constantly present in the buccal secretions and upon the surface of the moist mucous membrane. Some are occasional and accidental, while others appear to have their normal habitat in the mouth, where the conditions as to warmth, moisture, and organic matter are extremely favorable for their development. Up to the year 1885 Professor Miller, of Berlin, had isolated twenty-two different species from the human mouth—ten were cocci; five short bacilli; six long bacilli, and one a spirillum. He later cultivated eight additional species. Vignal has isolated and described seventeen

species obtained by him in pure culture from the healthy human mouth; most of them are bacilli. Miller, who found micrococci to be the more numerous, supposes the difference in results to be due to the fact that many of the cocci do not grow on nutrient gelatine, which was the medium employed by Vignal.

Among the species we find two of the most common pus cocci, namely: the staphylococcus albus and aureus. Very different results have been reported by different observers as to the frequency with which these pathogenic cocci are found in the buccal cavity. Black, in the saliva of ten healthy individuals, found the staphylococcus pyogenes aureus seven times, the staphylococcus albus four times, and the streptococcus pyogenes three times. On the other hand, Netter found the staphylococcus aureus only seven times out of one hundred and twenty-seven persons examined. Vignal, in the course of his researches, did not find the streptococcus pyogenes at all. Experiments made by Sternberg, Vulpian, Fraenkel, Netter, and others, show that the diplococcus pneumoniae is frequently present in the mouths of healthy individuals. Netter found it in fifteen per cent. of one hundred and sixty-five cases. Several other species have also been isolated by late observers. Sanarelli has also shown that the normal saliva has the power to destroy the vitality of a limited number of certain pathogenic bacteria, among them the staphylococcus aureus and streptococcus pyogenes.

RELATIVE FREQUENCY OF MICRO-ORGANISMS.

The small number of organisms found in the course of this study is probably because many do not grow on the media employed, and because others do not develop in the short time allowed before the cultures are examined.

The organisms most commonly met with, either alone or associated with the Klebs-Löffler bacilli, were streptococci and staphylococci. Diplococci were found in a number of cases and various forms of bacilli met with from time to time.

Streptococci occurred in 191 cases	48%
Staphylococci occurred in 226 cases	74
Diplococci occurred in 54 cases	13
Bacilli occurred in 87 cases	22

MORTALITY.

In this routine work no attempt was made to determine the nature of these bacilli, although several of them were carefully worked out in a shorter series to be reported later. The diplococcus lanceolatus was also noted in nine cases. As has already been stated, the mortality in cases containing the Klebs-Löffler bacillus was forty-one per cent. against twenty-three per cent. in cases in which it was absent. How the mortality was influenced by the presence or association of the various bacteria is shown in the following table:

K. L. alone in 46, of which 20 died	43%
K. L. with streptococci in 21, of which 6 died	28
K. L. with staphylococci in 93, of which 43 died	46
K. L. with streptococci and staphylococci in 77, of which 29 died	38
K. L. with others in 3, of which 1 died	33
Streptococci alone in 18, of which 1 died	5
Staphylococci alone in 27, of which 15 died	40
Staphylococci and streptococci 99, of which 19 died	19
Others in 5, of which 2 died	40

These figures show that the mortality is about twice

as great in those pseudo-membranous inflammations of the throat in which the Klebs-Löffler bacillus is present as in those in which it is absent. They also show that the mortality is not appreciably altered by the presence of other bacteria in association with the diphtheria bacillus. This result is somewhat at variance with those obtained by other investigators, several of whom have done special work with regard to the influence of other bacteria on the virulence of the Klebs-Löffler bacillus. Roux and Yersin (27) made injection experiments on guinea-pigs with mixed cultures of Löffler's bacillus and erysipelas. The animals experimented on died in forty-eight hours, while other guinea-pigs, which were inoculated with pure cultures of the same diphtheria bacillus, did not die. They also found certain products in mixed cultures which were not present in the pure cultures of either organism.

The toxic albumens obtained from the mixed cultures were much more virulent than those from the pure. Those of pure cultures of diphtheria bacilli killed guinea-pigs in thirty-six hours, while those from mixed cultures killed them in ten hours. Janson (28) thinks that the prognosis is worse when the bacilli are associated with a streptococcus. Heubner (15) found that sixty-six per cent. of the cases in which the bacilli were found alone died, and fifty-five per cent. of those in which they were associated with other cocci. Martin (23) found that in all cases of diphtheria where the streptococci were present there was a more fatal course than in those where only simple forms of cocci were found. He thinks that the presence of streptococci, either with or without the bacillus, materially complicates the prognosis. Goldscheider (24) found that the cases in which streptococci were present ran a more severe course, and lasted longer, and thinks that they may play a very important rôle in diphtheria. Gottstein (25) thinks that the streptococcus symbiosis may cause an increase in the virulence of the bacilli. Barbier (26) thinks that the diphtheritic infection may have a much more malignant character when it is engrafted on a streptococcus inflammation. He is inclined to believe that there are two forms of diphtheria to be separated from one another, one the pure form, and the other mixed with streptococcus. The latter corresponds to the form which is known as septic diphtheria.

The general opinion thus seems to be that other organisms, especially streptococci, in connection with the Klebs-Löffler bacillus, render the prognosis more grave. It would seem from my figures, however, that they have little or no influence. It would also seem that staphylococci, either alone or in combination, were more fatal than streptococci.

A series of twenty-five cases, uncomplicated by scarlet fever and containing the Klebs-Löffler bacillus, were examined more carefully. Agar plates were made from the first slant tube of blood serum, and all the organisms present isolated in pure cultures. Pure cultures of all the Klebs-Löffler bacilli were obtained upon blood serum, of the streptococci on glycerine agar, and of the staphylococci on blood serum or agar. The staphylococci were also further differentiated by growth and liquefaction in gelatine stick cultures. The other organisms met with were studied as to their cultural peculiarities on the various media and inoculated into animals. The following table shows the results obtained:

No.	Name.	Diag.	Bacteria.	Result.
1	M. B.	D.	K. L. streptococci	D.
2	B. C.	D.	K. L. streptococci : staphylococcus albus.	D.
3	D. F.	D.	K. L. streptococci : staphylococci aureus.	W.
4	F. K.	D.	K. L. streptococci	D.
5	A. O.	D.	K. L. staphylococcus albus.	W.
6	C. K.	D.	K. L. streptococci	W.
7	S. G.	D.	K. L. streptococci : staphylococcus albus, staphylococcus aureus.	D.
8	S. M.	D.	K. L. streptococci	W.
9	M. D.	D.	K. L. streptococci	D.
10	F. R.	D.	K. L. bacillus coli communis (1)	D.
11	F. H.	D.	K. L. streptococci : staphylococcus aureus.	D.
12	S. R.	D.	K. L. streptococci	W.
13	W. M.	D.	K. L. streptococci : diplo-bacillus (3)	D.
14	V. E.	D.	K. L. streptococci	W.
15	A. A.	D.	K. L. streptococci : staphylococcus aureus.	W.
16	E. W.	D.	K. L. streptococci	D.
17	O. T.	D.	K. L. staphylococcus albus	D.
18	F. H.	D.	K. L. staphylococcus aureus	D.
19	J. H.	D.	K. L. streptococci	W.
20	V. P.	D.	K. L. large diplococcus (3)	W.
21	L. R.	D.	K. L. streptococci, large diplococcus (3)	D.
22	E. M.	D.	K. L. streptococci, diplo-bacillus	D.
23	G. T.	D.	K. L. streptococci, short bacillus (4)	W.
24	T. K.	D.	K. L. streptococci : staphylococcus aureus.	D.
25	B. H.	D.	K. L. staphylococcus albus, staphylococcus aureus.	D.

(1) Bacillus Coli Communis.

Diagnosis made on following peculiarities: Short, thick bacillus with rounded ends, often resembling a coccus. Acidified and coagulated litmus milk. Formed gas in sugar agar. Did not liquefy gelatine. Gave moist, distinct, yellowish growth on potato. Slightly motile in hanging drop of bouillon culture. Gave indol reaction in Dunham's solution.

(2) Diplo-Bacillus.

A diplo-bacillus with lancet-shaped ends. Morphologically always the same. Stains readily with the aniline dyes. Grows freely in white colonies on blood serum and glycerine agar. No growth in gelatine. Invisible growth on potato. Does not form gas in sugar agar. Does not coagulate or acidulate litmus milk. Whitish growth at bottom of bouillon. Non-motile in hanging drop of bouillon culture. Non-pathogenic for guinea-pigs. Resembles more nearly the bacillus septicus acuminatus of Babes than any other, but is probably not the same. Was found in two cases of this short series and observed a good many times in the long series, although its cultural characteristics were not studied at that time.

(3) Large Diplococcus.

Colonies on agar plates. White, homogeneously granular, with well-defined edges. Grows rapidly. Profuse white growth on glycerine agar; removed from surface with difficulty. Grows freely on blood serum. No growth in gelatine. Slow growth at bottom of bouillon. Non-motile in hanging drop of bouillon culture. No growth on potato. Non-pathogenic for guinea-pigs.

(4) Short Bacillus.

A small bacillus, not forming spores. Stains with aniline colors. On gelatine plates deep colonies show coarsely-granular, sharply-defined centre with finely-granular, outer layer having well-defined border. Liquefy plates in 24°-48°. Stick cultures in gelatine tubes show profuse white growth, liquefying surface and extending in pyramidal shape downward. Profuse growth on blood serum which it liquefies. Moist, yellowish growth on potato. Profuse white growth on surface of sugar agar, but no gas formation in stick culture. Gives marked white cloudiness in bouillon culture, and after a few days forms a white pellicle on surface. Motile in hanging drop of bouillon culture.

Does not coagulate or acidify litmus milk. Profuse creamy-colored growth on glycerine agar. Non-pathogenic for guinea-pigs.

These two last forms do not correspond to any described by Sternberg. This may be either because they have not been met with before, or if so, imperfectly described.

Of course, statistics compiled from so small a number of cases are of little value, but I nevertheless give them for what they are worth.

Klebs-Löffler bacillus not found alone.

Streptococci in 19	76%
Staphylococci in 10	40
K. L. and streptococci in 9	36
K. L. and staphylococci in 4	16
K. L., streptococci and staphylococci in 6	24
General mortality	56
Mortality, K. L. with streptococci alone	33
" K. L. with staphylococci alone	66
" K. L. with streptococci and staphylococci	66

Thus this series, as far as it goes, also seems to prove that staphylococci are more fatal in combination with the Klebs-Löffler bacilli than streptococci. It must be remembered, however, that in both series bacteriological results have alone been considered. It is very probable that an explanation for this excessive mortality in connection with the staphylococci would be found in the other pathological conditions, other factors, possibly severe lung complications, being present to account for the fatal termination.

Streptococci were present in a much larger proportion of cases than in the longer series. This result is, however, probably more correct, for in the routine examination mistakes were liable to arise in two ways. Streptococci, on account of their slower and smaller growth, were probably missed in some cases, and in others called staphylococci because they were bunched, it often being impossible to differentiate the two forms when closely crowded on a cover-slip.

VIABILITY OF KLEBS-LÖFFLER BACILLUS. — PERIOD OF CONTAGIOUSNESS.

Investigations were begun as to the length of time that the Klebs-Löffler bacilli remained in the throat after it was apparently clean. Patients are not now allowed to leave the hospital until the bacilli have disappeared from both throat and nose, as shown by bacteriological examination. The results of the examinations in the first twenty-five cases is appended. Considerable work has recently been done in this direction by several investigators. Janson (28) found the bacilli fourteen days, and Haubner (15) ten days after the membrane had disappeared from the throat. Tobiesen (30) examined the throats of forty-six patients, who left the hospital as well, for diphtheria bacilli. They were found in twenty-four cases, the length of time which they persisted bearing no relation to the previous severity of the case. They were found eight times four days after the membrane had vanished; three times, five days after; three times, seven days after; three, nine days after; one, eleven days after; one, fourteen days after; one, fifteen days after; one, seventeen days after; and one, thirty-one days after. These patients did not present any other pathological condition. He thinks that the presence of bacilli in the pharynx is assisted by pathological conditions of the larynx and nose. This late bacillus had the same pathogenic influence, on the inoculation of guinea-pigs, as the others. He regards it as possible that half the

patients who leave a hospital, after having had diphtheria, have the power to infect their surroundings with the disease. He found one case who, after leaving the hospital, was certainly the source of infection for others. Löffler (31) investigated one case daily as to the presence of diphtheria bacilli. The fever disappeared on the fifth day, and the throat lesions on the sixteenth day. The bacilli, however, remained for four weeks longer. Verstraeten (32) also found the bacilli four weeks after the membrane had disappeared and Roux and Yersin (27) found them in virulent condition fourteen days after the membrane had vanished.

In my cases it was found that the average length of time that the Klebs-Löffler bacillus remained in the throat or nose after the membrane had disappeared was ten days. The average duration was the same for both throat and nose, although in some cases the bacilli were found in the throat much longer than in the nose, and *vice versa*. The bacilli disappeared in one case the day after the throat was clear; in three, three days after, and in one, four days after. In two cases in which the bacilli were never found in the nose, they remained in the throat ten and seventeen days respectively. In other cases, they were present in the throat thirty-seven days, and in the nose thirty-six days; in the throat twenty-two days and nose eighteen days; in throat ten days and nose seventeen days; and in both twenty-seven days. In order to test the virulence of these late bacilli, a guinea-pig was inoculated with a pure culture of the bacillus obtained from a throat which had been perfectly clear for ten days. It died on the third day, and the Klebs-Löffler bacillus was recovered from the seat of inoculation.

PSEUDO-DIPHTHERITIC BACILLUS.

The so-called pseudo-diphtheritic bacillus was not considered in this series, as the diagnosis was usually made entirely on morphology, and the cultural and pathogenic properties of the bacilli rarely studied. So much has been written about this organism, however, that it deserves consideration. The evidence is very contradictory, however, and the question of its existence must still be regarded as unsettled. Hoffmann (16) finds that this bacillus is a frequent and apparently regular inhabitant of the pharynx, and that it agrees very closely in its morphology and physiology with the Klebs-Löffler bacillus, but is non-virulent. He says that certain definite morphological differences may be made out on careful comparison with the Klebs-Löffler bacillus, but fails to state them clearly. Escherich (17) thinks that the diphtheria bacillus has in bouillon cultures a greater tendency to arrange itself in parallel masses, while the pseudo-bacillus lies in irregular groups. In the pseudo-bacillus there is a brown color on old agar cultures which never occurs on diphtheria cultures. He regards as the most distinctive point the growth in litmus bouillon, which at first remains violet and then becomes red. Diphtheria cultures produce this more rapidly. By inoculations of guinea-pigs, no immunity could be produced. According to his investigations, the pseudo-bacillus has been found only thirteen times in three hundred and twenty cases. Fraenkel (33) thinks that it is the true bacillus which loses its virulence on artificial media, just as the pneumococcus does. Roux and Fraenkel consider the two bacilli identical, and that the only difference is one of virulence. Roux and Yersin (27) found that the only difference between these forms appears to be that the

false bacillus is found shorter on serum, that it develops more abundantly in bouillon, and continues to grow at twenty to twenty-two, while the virulent one grows only slowly. The change in the reaction of the bouillon takes place less quickly in the pseudo-diphtheritic than in the diphtheritic. They sought for this pseudo-form in forty-five sound children, and found it in fifteen. They also found it in the throats of twenty-six children out of fifty-nine in a village where there was no diphtheria. It was always present in small numbers. The inoculation of this bacillus never produced fatal consequences; at the most, only a local oedema. They succeeded in various ways in diminishing the virulence of cultures of the virulent bacilli. The non-virulent organism thus produced compared fully with the pseudo-diphtheritic bacillus. These pseudo and non-virulent forms did not produce any toxins. In some cases, also, it was possible to increase the virulence of the organisms. The virulence was increased when the guinea-pig was inoculated with an active erysipelas culture at the same time. Neither the weakened bacillus nor the streptococcus alone could produce the death of the animal, but the mixed cultures could. Death took place with the phenomena of diphtheria, and the diphtheritic bacilli underwent an increase of virulence. The weight of evidence at present thus seems to show that the organisms are the same, differing only in virulence. Further work is necessary, however, before the question can be definitely settled.

RESULTS.

The results obtained from the study of this large number of cases are not as valuable as they would be if the clinical side was considered in connection with the bacteriological. It is probable, for example, that the mortality apparently due to staphylococci would be to a certain extent explained by a careful examination of the cases clinically. The relation of the operative cases to the bacteria present is also important. There would be great danger, however, of detracting from the value of the results as a whole, if too many factors were considered. It is unfortunate, also, that the fatal cases could not have been autopsied, as an accurate knowledge of the pathological and bacteriological conditions would be invaluable. It is extremely difficult, however, to obtain autopsies in Boston, and in no case more so than in that of a contagious disease. It is to be hoped, nevertheless, that they may be obtained in the future and this vast amount of material utilized, for here lies the field for conclusively demonstrating the results of the symbiosis of other forms of bacteria with the Klebs-Löffler bacillus.

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RECURRENT APPENDICITIS.¹

BY ALBERT AUGUST, M.D., CAMBRIDGE, MASS.

THE subject of this paper is a young man, age twenty-three years, single, student. Born and lives in Cambridge. Family history negative. Has always been well until he had typhoid fever three years ago, from which he entirely recovered, but has been troubled with chronic constipation since.

His first attack of appendicitis was January 1, 1892, when he complained of pain across the lower part of the abdomen, not very acute, but with considerable soreness; bowels were constipated. He entered the Cambridge Hospital at this time, and the record of the examination showed him to be of fair nutrition, pale and nervous, tongue coated with a pasty white coat. There was general tenderness over the abdomen, but it was especially tender in the right and left iliac regions. No dullness on percussion except in hypogastrium, due to a distended bladder, for the relief of which the catheter was used. The treatment at this time consisted of morphia suppositories, sufficient to keep him comfortable, and flaxseed poultices over the abdomen.

January 2d, the record shows some resistance in the right iliac region, with considerable sensitiveness on superficial pressure. Bowels were flat. I will say here that our patient was extremely hyperæsthetic.

January 4th, the tenderness over the abdomen had considerably diminished. Area of dullness had decreased in the right iliac region. Bowels were moved by enema. As our patient continued to improve, the tenderness became more distinctly confined to the area of the appendix.

He was discharged well January 14, 1892, having been in the hospital thirteen days. After he left the hospital he improved gradually, and at the end of a few weeks he was able to resume his college work.

His next attack was February 14, 1893, a little over a year since the first. He had been feeling poorly for five days, due to constipation, for which he took compound licorice powder. On the 18th he went to an evening party, and on his return home began to vomit, and complained of considerable pain in the abdomen.

He entered the hospital February 16th, where the recorded examination showed much tenderness in the right iliac region. The point of extreme pain was just

¹ Read before the Cambridge Society for Medical Improvement.

below a line drawn from the anterior superior spine to the umbilicus; the tender area was about two inches long, and one and one-half inches wide, with the internal border about three-quarters of an inch to the right of the median line. His general and local condition constantly improved after entering the hospital, so that he was discharged on March 2d with only slight resistance in the right iliac region, but no dulness on percussion.

The third attack occurred April 14, 1893, an interval of a little over a month, and again after dancing at a party. He went to bed feeling perfectly well, but awoke early in the morning with severe pain in the bowels, most marked in the right iliac region. He entered the hospital on that same afternoon. Examination showed the bowels to be flat; on pressure, there was slight resistance over same area as described in previous attack, with the greatest tenderness confined to this region. Examination of urine showed it to be normal.

A consultation of the hospital staff was held at this time with reference to surgical interference, but it was decided to wait and advise operation during an interval between the attacks.

He steadily improved with a diminution of the resistance in the right iliac region and disappearance of the pain, and was discharged well March 22d.

Our patient gradually improved, but not wholly. He became very pale and anæmic, was extremely nervous and irritable, and was obliged to give up his college work. He was unable to take any immoderate exercise, on account of soreness and a feeling of stiffness in his right side; and if any one accidentally came in contact with him here, it would cause him considerable pain. His general condition became extremely erratic now. One day he felt perfectly well, and would indulge either in a day's work or amusement, for which he would pay the penalty on the next by being overcome with a sense of weariness and inability for any unusual exertion; in other words, he was reduced to the state of semi-invalidism, so much so that in the latter part of July, I urged him to take a journey into the country, to see what a change of air might do for his general condition. He had grown extremely nervous about himself, and was in constant fear of another attack.

On the 24th of July last, he went to New London, N. H.; and while there he indulged in considerable exercise — base-ball and riding (or rather jolting) over the New Hampshire roads, etc.

On the 26th of July he began to feel ill; and on the evening of that day he was seized with extreme pain in the right iliac region, and vomited considerably. They had no morphia to give him, and he suffered extreme agonies; the only relief he obtained was by frequent applications of hot poultices. In this way they brought him through the night, and until they were able to procure some morphia for him on the next morning.

I saw him in New London, July 28th, with a temperature of 102.5°, and pulse 120; he had not passed water for eighteen hours, and on his countenance was a very anxious expression. The abdomen was flat; in the right iliac region there was considerable dulness, with the tenderness well marked at McBurney's point; and the general condition was like that of his three previous attacks. By means of rest, poultices, and morphia sufficient to control his pain, we were

able to bring him home, August 3d, when he began to improve again to a certain extent.

About a week later, August 11th, after running for a train, he was seized with another attack, very slight, which confined him to his bed for four days only.

He was now tired of Damocles' sword, and readily acquiesced when relief was offered to him by surgical means.

He entered the Massachusetts General Hospital August 23, 1893. The operation was performed by Dr. A. T. Cabot, August 26th, the patient having been previously carefully prepared. On the day previous to the operation, he was allowed no solid food; his bowels were well moved with castor-oil; and an enema, with turpentine, was administered. On the morning of the operation he was thoroughly bathed, and an antiseptic poultice placed over the abdomen.

Operation. — Patient was anæsthetized, ether being used. An incision was made over McBurney's point, about four and one-half inches long, the general direction corresponding to the outer border of the rectus muscle. Passing the fingers into the peritoneal cavity, the appendix was found in a bed of very firm adhesions, attached to the anterior abdominal wall. Adhesions were separated with the fingers, and the appendix was liberated and brought up into view at the opening. The appendix was surrounded with adhesive inflammatory products, from which it was freed. Hæmorrhage from a small artery on the external surface of the appendix persisted, and the artery was tied. A silk ligature was now passed around the base of the appendix; a cuff of the peritoneal coat of the appendix was dissected back; the appendix was cut off; and the peritoneal cuff was stitched over the stump with silk. The stump was turned toward the right side of the abdominal cavity. The abdominal wound was brought together by means of six silk-worm-gut ligatures, which were passed through all the layers of the abdominal wall; the wound was sewed up tight, no drainage being used.

Macroscopic examination of the appendix showed it to be two and one-half inches long, with the walls somewhat thickened; at the end and on one side it was perforated, but the surrounding parts were protected by the inflammatory products. The lumen was pervious, and no concretion found. I have not received the report of the microscopic examination.

He made a good recovery from the ether, and made a progressive convalescence. His temperature was practically normal throughout; his bowels were moved August 28th with calomel and one seidlitz powder, and thereafter moved voluntarily. On account of the unusual length of the incision, the stitches were not removed until the twelfth day, when everything was found firmly united. He walked out from the hospital well, September 11th, sixteen days after the operation. Since leaving the hospital, he has steadily improved, both in weight and general condition. He has lost that nervous irritability to a great extent, and has regained his former ambition. He is now able to go in town every day, and do a day's work without any of the former fatigue. I saw him recently, and examination of the right iliac fossa revealed no tenderness or resistance whatever.

The particular etiology of appendicitis is still somewhat obscure, that is, we have no definite set of predisposing causes which we can be sure are the origin of the trouble. Some writers speak of constipation as

a *sine qua non*; others suppose that diarrhoea plays an important part; still others think that it is caused by the impaction of a foreign body; and Treves considers a short mesentery as an important etiological factor, and a consequent twisting of the appendix as a result of this.

Constipation seems rather coincident than etiological. In 209 cases analyzed by R. H. Fitz, only 38 had an antecedent history of constipation; while Talamon points out that the most obstinate cases of constipation are in women, and still appendicitis is four times as common in males as in females. Again, we have constipation the rule in people of advanced age; and we all know that the greatest number of cases of appendicitis occurs between the ages of fifteen and thirty years.

Treves says that faecal concretions are not commonly found; Matterstack found only nine cases in a series of 146. Talamon suggests that a considerable proportion of cases are caused by faecal concretions, those not being found at operation having possibly been forced back by the muscular contractions of the appendix, or if an abscess has formed with perforation, that the faecal concretion has become softened and disintegrated by the action of the pus.

I have been much interested in Dr. Talamon's theory as regards the predisposing cause. He suggests the existence of a membranous colitis, or intestinal atony, where the patient has uncomfortable, distressing pains in the bowels, irregular stools, sometimes mucoid and sometimes constipated, and that the faecal and mucoid matters are deposited in the cul-de-sacs of the mucosa and are dried, and under favorable conditions (for example, increased peristalsis) are forced into the lumen of the appendix. He considers this to be the primary cause in recurrent attacks, which causes a peri-appendicitis and consequent adhesive inflammation about the appendix which binds it at an acute angle to the caecum, as in the subject of this paper, where the appendix was bound down firmly to the anterior abdominal wall in such a manner that all fluids or solids were forced into the caecum against the action of gravity. It is very easy to see how the appendix may become distended with fluids under these conditions, and how congestion and ulceration may follow.

Dr. Cabot has noticed in almost all of his operations for recurrent appendicitis that the appendix was bound down by adhesions in such a manner as to twist the lumen of the appendix out of its proper relations.

Dr. W. T. Bull, in the *New York Medical Record* of March 18, 1893, describes twelve cases in which he also noticed the appendix sharply bent and fastened in that position by adhesions.

In some cases, the tip of the appendix had been imbedded in a small abscess-cavity, which remained latent only to light up and cause a recurrence at the slightest occasion.

Fitz states that attacks of indigestion and acts of violence, especially from lifting, jumping and pulling, are exciting causes in one-fifth of the cases. A local cause is found in more than three-fifths of all cases, for example, inspissated faecal matters, or the presence of a foreign body.

The question of the propriety of operating in the interval between the attacks is an open one, and must be considered in each individual case. Dr. Fitz, in his statistics, places the percentage of recurrence at 11 per cent. Dr. S. F. Dennis thinks that conservatism

should be used in operating, since only 11 per cent. of the cases are recurrent, and of these some end in resolution, or else the lumen of the appendix is ablated by chronic inflammation, and is reduced to a thickened fibrous cord. In some cases, he says, the perforation will cause an extra-peritoneal abscess; and in still others there will be a localized, circumscribed, intra-peritoneal abscess, which may empty itself by rupturing into the rectum, vagina, caecum or bladder; and that only a small percentage of dangerous cases would be left, and he thinks these might be operated on early in the next attack.

Treves first advised the operation in 1877, and considers that the following indications justify it: (1) If the attacks have been very numerous; (2) if the attacks are increasing in frequency and in severity; (3) if last attack has been so severe as to place the patient's life in considerable danger; (4) if the constant recurrences have reduced the patient to a condition of chronic invalidism, and has rendered him unfit for occupation; (5) if owing to persistence of certain local symptoms during the quiescent state, there is a probability of a collection of pus.

As regards the mortality of the operation. In a collection of 81 cases by Cabot, there has been only one death, which was due to sepsis, a mortality of about $1\frac{1}{2}$ per cent. Treves reports 14 cases operated upon, all of which made a sound recovery.

It seems to me that if an operation is inevitable, the sooner it is done the better, that is, before the patient has had too many recurrences; for then there is a liability that the adhesions are dense and firm, and very difficult of separation.

Some writers say that there is no necessity of alarm in recurrent attacks, for nature protects herself against general infection of the peritoneum by these very adhesions which are formed, and that general peritonitis is avoided. Still, Price has collected 30 cases of recurrent appendicitis, and 20 of these exploded into an abscess or general peritonitis before the third attack.

The operation during an interval seems a safer one than that during an acute attack, even if that is done early; for in the latter case you have no time to prepare your patient for an aseptic operation. The patient is in an extremely nervous condition, is fatigued from pain, his bowels are more or less distended, the site of the operation has been reddened or blistered by stimulating embrocations; so, as Cabot says, it is almost impossible to do an aseptic operation. And here I would reiterate Dr. Cabot's plea, that the general practitioner who has a case of appendicitis under his charge, should use antiseptic poultices, which will render an operation much safer if one has to be done in an emergency.

It is very much different in an interval between the attacks. You approach the patient under entirely different conditions; he has been prepared for the operation, both in body and in mind; his diet has been regulated; his bowels have been moved, and all flatus possible has been removed; and the field of operation has been made thoroughly aseptic.

The technique of the operation varies according to the individual taste of each operator. Dr. McBurney uses the cauter and ligature in all of his cases. Dr. Treves sews up all of his cases without drainage.

Dr. S. C. Gordon, in the *Boston Medical and Surgical Journal*, reports six cases with recovery. He believes that all cases can be carried through the acute

stage by means of salines and depletion, and that it is much safer to operate in an interval; he also sews up without drainage, even those in which he finds an abscess.

In conclusion, I would say that it does not seem to me possible to lay down any definite rules as to when the operation should be done, but that each case must be considered separately. It seems to me that if it were possible to carry a patient through the acute stage without operation it should be done, since the operation in the interval by a skillful surgeon carries with it such a small mortality, and the abdominal wound can be sewed up tight, therefore minimizing the danger of a subsequent hernia.

Clinical Department.

A CASE OF MALIGNANT ENDOCARDITIS.¹

BY WILLIAM E. FAY, M.D.

THE early recognition of malignant endocarditis is so often difficult to the clinician that I desire to read this case. It is with the hope that it may be suggestive of discussion which will elucidate the way of diagnosis.

The patient was an Irish waiting-maid of twenty-two. Of her family there is little knowledge. Measles in early childhood; joints swollen and painful, with rheumatic fever lasting one month at the age of twelve; catamenia beginning three years later, always regular; occasional headaches; and a futile operation to find a needle she thought lost in her foot, comprises the known previous history.

On June 22d last, she is reported as standing in a china-closet, during a thunder storm of unusual severity, attending to her duties. Suddenly she was unable to speak. She understood what was said to her. She knew the words she ought to say, but could not utter them. From her own statement she thought she was all right in every other way, because she could move her hands and feet, and see and hear and eat. She experienced a chill some time during the next two days, when she was placed in the Newport Hospital. In a few days more she began to be able to say a word or two. Sometimes she was unable to repeat a word just spoken. She gradually acquired increasing power of speech during the six weeks of her treatment there.

On August 5th she was transferred to the Carney Hospital, and admitted to the service of Dr. James J. Minot. She had partial aphasia and huskiness of voice. Pain in left side, under costal border. Temperature 102.5° F. in the evening, subnormal in morning. A trace of albumen with a few blood and vaginal epithelial cells found at this time soon disappeared. Urine otherwise unimportant. No error detected in reaction of pupils to light or accommodation, nor in the protrusion of tongue. No paralysis. Throat and lungs normal. Apex beat of heart seen in fifth interspace, inside the mammary line. Pulse full, regular, compressible. Systolic murmur quite loud at apex, propagated into axilla, heard posteriorly at border of left scapula, anteriorly lightly over præcordia to base. Pulmonic second sound increased. Splenic area considerably increased, but limits indefinite on account of extreme

tenderness at this time. No tenderness elsewhere. No extreme tympany. Skin sensations normal.

During the following two weeks her speech became pretty natural, except for a certain hesitancy. She had a daily rise of temperature in the afternoon with morning remissions between the extreme limits of 96.4° and 104.8°.

Ten grains of quinine given at height of fever, caused gradual diminution of temperature, tinnitus and headache. Eight grains daily in divided doses was not well borne. However, during administration of quinine the variance in limits of pyrexia was somewhat lessened. Examination for plasmodium malarie was negative in results.

The patient came under my observation, during the absence of Dr. Minot, in the second half of August. She presented an aspect of anxiety, pale, eyes becoming slightly sunken. Tongue clean. No cough. No dyspnoea. No hæmorrhages. No abdominal tenderness except over area of splenic dulness. This area extended from the sixth interspace to the costal limit, where during inspiration the edge could be dimly felt. Dull pain here was more or less constant. No rose spots or petechiae. Urine and dejections normal. Heart's murmur unchanged. Baffled in diagnosis, I asked Dr. J. J. Thomas to see the case with me and examine the blood. He found the red to the white as 100 to 1. Red normal. White in excess. Hæmoglobin 50 per cent. A condition more often pertaining to chronic, and after some acute diseases, as malaria and pneumonia, not typhoid fever.

About September 1st a small red spot appeared just below the trochanter of right femur, extending two or three centimetres. A small abscess developed at the centre, with infiltrated, uneven edge. Somewhat painful. Yielded a drop of pus. Healed in three weeks, under antiseptic dressings. Through this month patient gained a little strength. Splenic pain diminished. She sat up. A week more, and she was again in bed. Morning remissions of temperature are a degree or two less, and the evening rise higher. Pain recurs in the region of spleen. Urine becomes smoky; amount diminished; specific gravity 1.023; sugar absent; large trace of albumen; hyalin, fine, granular, fibrinous blood and epithelial casts; free blood and epithelial cells. It is five weeks since the urine was normal. In another fortnight there is one-eighth per cent. albumen; casts more numerous, of both large and small diameter. The spleen continues to be felt. Cedema of face appears. Semi-comatose condition supervenes.

On November 20th patient dies.

This illness extended over 122 days. In reviewing the time, it seems to divide itself somewhat into different periods. First aphasia is prominent, whether due to functional or organic cause? The kidneys showed no evidence to signify a causal relation to embolus. The mitral valve seemed responsible for a heart murmur, but this was thought to be an old chronic injury from an attack of rheumatism in childhood, and incidental to this illness. There had been no trauma. It was difficult to distinguish whether the trouble was motor aphasia or hysterical aphonia. There was no mind-blindness nor mind-deafness; and if Broca's region was impaired, lesion must have been extremely limited to be without some loss of function in the face, arm, or leg. In favor of the functional causation seemed to be the onset of the trouble coincident with her alarm from thunder and lightning, which frightened

¹ Read before the Boston Society for Medical Observation, December 4, 1893.

others about her; her age and sex. Also from the surgeon who sought the needle in her foot a year before, is learned her disposition then, which led him to suppose it might have been hysterically lost.

As this symptom passed, the question of malaria offers. There had been one chill reported. A suggestion of malaria accompanied her from the Newport Hospital. She had almost daily rises of temperature of four or five degrees, and an enlarged splenic area. But the lack of distinct periodicity, the tenderness disproportionate and extreme over a moderately enlarged spleen, the absence of plasmodium malarie in examinations made by the interne (Mr. Dewis), and the intolerance of moderate doses of quinine made this diagnosis improbable.

Typhoid fever was disregarded after observing that the peculiar temperature chart maintained its character constantly without any typhoidal curve, the tongue clean, no rose spots, and nothing abnormal with the bowels. In regard to tuberculosis, she had some hectic at times, progressive emaciation; and but for its rarity the skin lesion upon the thigh might have pointed to it, as it somewhat resembled the description in the books of such affections. Microscopic examination of scraping from same by Dr. Coggeshall discovered no tubercle bacillus. Examination of the choroids was not made. Tuberculosis of the spleen is always secondary, so far as I know. The lungs were repeatedly found quite normal, and no other origin of tubercular affection could be proved.

There was no condition of anemia shown by examination of the blood to account for the patient's condition.

Some splenic or peri-splenic abscess could not be excluded by the symptoms; but the infectious source to which it might be secondary, and the source of the sudden severe nephritis did not appear. Cultures from the blood were not attempted during life. Had they been successfully made, inoculations in small animals might have given certainty, where clinical signs left us in doubt until facts were obtained by autopsy.

Autopsy eighteen hours after death, by Dr. F. Coggeshall: Small stature, emaciation. Rigor mortis marked. Scar, size of silver quarter, under right trochanter. Whole brain very soft. Left temporal lobe and adjacent portions especially softened and yellowish in color.

Organs were taken to Dr. W. F. Whitney, at the Harvard Medical School, who found the following: Heart of normal size. Right side normal. Left auricle slightly dilated. In it and on surface covered with small papillary fibrous projections which were also found on the edge of the mitral valve. With these were also associated soft, grayish, opaque small masses, especially abundant on the chordae tendinae. Left ventricle presented nothing abnormal, nor was anything abnormal noticed in the wall of the heart. Lungs, liver and stomach presented no marked deviations from normal. Beneath the mucous membrane in the lower part of the ilium were numerous small hemorrhagic spots. At the root of the mesentery was a swelling, the size of an egg, composed of clotted blood, which seemed to be more or less extravasated into the tissues. The spleen was twice its normal size. Surface marked by several depressed cicatricial places, the base of which had a yellowish aspect. On section showed the pulp markedly increased; the cicatrized portions above mentioned corresponded to more or less wedge-shaped, yellow, opaque extensions into the sub-

stance of the spleen, and which were sharply differentiated from it. The kidneys were large, capsules slightly adherent. On section, found to be swollen, very moist surface, Malpighian bodies appearing as minute whitish bodies in the midst of grayish cortical substance, and with numerous small hemorrhagic spots. There were several cicatricial places in the kidney similar in character to those in the spleen, and which in like manner were continued into yellowish, sharply differentiated, somewhat wedge-shaped nodules. Anatomical diagnosis: Softening of the brain; chronic verrucous endocarditis, associated with acute vegetative endocarditis; anæmic necrosis of spleen and kidneys, results of infarction; acute diffuse and glomerulo nephritis.

I am especially indebted to Drs. Minot and Temple for permitting me to report a case from their services at the Carney Hospital, and to Dr. Whitney for his examination of the organs.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, December 11, 1893, the President, DR. C. F. FOLSOM, in the chair.

DR. J. J. PUTNAM made an oral communication concerning

A CASE OF MYXEDEMA.

The patient, who was present, was a woman of forty-four, and of Irish parentage, though she had lived a great many years in America. It is interesting to note that her sister, who still lives in Ireland, also presents symptoms which strongly suggest myxœdema.

The patient's symptoms were of gradual onset, and date back perhaps a year. Previously to this she had been in good health, except that for four years past the menstruation had been irregular, and for two years she had had "hot flushes." A puffiness of the hands was noticed a year ago, but not much was thought of it until six months ago, when a swelling of the face and a slowness and huskiness of speech attracted her attention more forcibly. At this time, also, her eyelids began to droop, so that she had to drag them up by wrinkling the forehead. Soon afterwards the feet became swollen, and the hands were noticed to be dry and scaly.

These changes are said to have been gradually increasing, but even now there is nothing to attract the notice of a casual observer.

On close examination there is observed, besides the above-mentioned conditions, a slowness of the motions of the tongue, a marked trace of the characteristic alabaster appearance of the eyelids, a slightly subnormal temperature (98° F.), slow pulse (69), and typical "supraclavicular fullness." The hair has been falling of late. The urine is normal. The diagnosis was confirmed by the fact that under treatment by feeding with desiccated sheep's thyroids (five to ten grains daily), which had been going on for two weeks, there had been a steady gain in all respects, except that the hair had continued to fall out.

[At the present time of writing this improvement

progressed still further, to the patient's great con-
The temperature and pulse are now normal; weight, which was 187, has fallen a number of lbs; the appearance and manner suggest greater
ness. An examination of dried and stained specimens of blood, made by Dr. Richard Cabot, shows the normal proportion of whites and reds, and no unusual liabilities.]

R. F. C. SHATTUCK presented

REPORT OF FOUR CASES OF MYXŒDEMA TREATED
BY THYROID EXTRACT.¹

DR. J. J. PUTNAM: I have been much interested in this subject for the last year or more, and have been very glad to hear Dr. Shattuck's paper. To speak of points to which he has alluded, I should like to say a word about the matter of dosage. I have recently read of a case where, from taking a single rather large dose of sheep-gland, the anginoid symptoms to which he has referred came on, and were quite serious. It is a curious thing that not only cases of this character, but also pains of other kinds, have shown themselves from time to time—I think especially intercostal neuralgia. Also, in one of Mache's cases, great prostration occurred, with some bowel complication, requiring the patient to keep the bed for some time.

With regard to the frequency with which this trouble occurs, it seems to me beyond question that some of these cases are often diagnosticated as Bright's disease. The second case that I saw, and in the treatment of which I took part, had a cousin and an aunt, both of whom had died long before anything was known of myxœdema, but who had certainly had the disease in a pronounced form. I knew them well, and one of them was believed to be a typical case of Bright's disease. The face was swelled, the lips were thick, and the voice was husky and hoarse. The face presented the same appearance, though in more marked degree, with that shown in the colored illustrations that Dr. Shattuck passed around. The sister of the patient whom I showed this evening also, from her account, would seem to be a victim of the same disease, although not recognized. I have not seen her; but she is said to have shown a similar loss of hair and marked weakness (without pain and without the signs of any particular disease), and puffiness of the face and hands. My second patient, who is still under the care of my brother, was at one time also supposed to have Bright's disease, because she had had albumen and casts in the urine for some time. Those have now disappeared with the treatment. I think it probably true, as Dr. Shattuck says, that the dose of thyroid extract to overcome symptoms will have to be increased in cold weather, because my first patient, who improved to a considerable degree between July and October, with the advent of cold weather fell off considerably, and the œdema of the eyelids returned to a marked degree. With regard to the first case that Dr. Shattuck described, and which I am extremely glad to have had the chance of seeing through his kindness, although I am not inclined to insist that his diagnosis was not correct, and although I have no doubt that it belongs in general to a large class of trophic disorders of peculiar kind, still it did not seem to me to be a typical case of myxœdema. The speech, instead of being slow, was quick; the mental

condition was active, instead of being very dull and apathetic; and the temperature was not subnormal, as has been the case in almost all the cases reported. Dr. Dercum described two years ago two cases which it seems to me should be mentioned in this connection. They were cases characterized by a peculiar form of obesity, with neuralgic pains and a few symptoms suggesting myxœdema, although many symptoms were wanting which would be necessary to make a complete picture of the disease. It is an interesting question, which has come up in connection with recent researches of Vermehren, of Copenhagen, whether some of the affections from which old people suffer, such as weak action of the heart and nutritive disorders of various kinds, may not be due to a slight failure of the thyroid. At any rate, he found that giving thyroid improved their condition. Thyroid has been used successfully against certain forms of obesity; and I have had several cases where patients not having myxœdema have lost weight for a time very rapidly, two or three of them losing in the neighborhood of forty pounds. The loss did not, however, continue indefinitely; and there are also other troubles in which it would appear we may possibly be able to use it with advantage.

DR. E. D. SPEAR: I want to add one suggestion in regard to the function of the thyroid gland, and that is the probable regulation of the cerebral circulation by means of the thyroid through the sympathetic system. I find that in certain aural cases where there is a certain noise in the ear which may be called a bruit, the thyroid gland is always enlarged; that is, the lobes of the thyroid are always enlarged, and that in those cases the pulse is always raised usually to 120 or 130 beats a minute. I only want to speak now of what has been referred to as pain about the heart in those cases where the thyroid extract has been given. I do not know as there is any connection, but I do know that the thyroid in some obscure way controls the cerebral circulation through the sympathetic; how it does it I cannot say. These clinical observations which I make in these cases are of interest, and, I think, should be studied in connection with all those obscure affections in which the thyroid is spoken of. It is a fact that, if in these cases I press upon the thyroid gland with my thumb to make massage to a light extent, the pulse drops immediately after from 120 to 60. If I continue the pressure the patient faints. If I stimulate the thyroid gland where it is enlarged by external irritants, I shall, instead of depressing the circulation, stimulate the pneumogastric apparently, and tone up the heart so that the pulse is made normal. These noises in the head are described by the patient as roaring noises, and are always accompanied with changes in the power of hearing, but with no obvious changes in the ear. I always found, however, that the turbinate body was enlarged, and that treatment in early cases—that is, in cases lasting from six weeks to six months, we will say—the simple application of heat to the thyroid gland by means of hot water upon a towel or flannel is sufficient to stop the noise and improve the hearing. Of course, in all, or most all my cases, I make local treatment. In the few cases which are slight I rely upon heat; but were I to map out a full treatment for a case of this kind where there is noise in the ear, deafness, I should, in addition to the heat to the thyroid, give a nerve stimulant; that is, strychnia in full doses, and apply mus-

¹ See page 177 of the Journal.

tard or some counter-irritant to the heart, and make local applications to the ear through the nose.

One other thing that I would like some of the neurologists to take up is to prove if my observation is correct. Of course, I know I am correct in regard to the function of the thyroid as regulating the cerebral circulation, but whether I am correct in this I am uncertain. In a large number of cases it is possible to induce sleep by means of application to the thyroid. I can relate one experience which will prove it was possible in one case to induce sleep by hot applications. One of my patients used to awake at all hours of the night. She was the wife of a fireman who was deaf, and she listened for his tapper. At any time of night or day she roused him and got him ready for the engine. After she came under treatment for nasal obstruction, I put her upon applications of heat to the thyroid. One afternoon at three she felt uncomfortable, had some disturbance in the head, made an application to her thyroid, and went to sleep! There were two alarms of fire, and at the end of an hour a policeman went in and asked what was the matter that she did not wake him up. I should like to have neurologists try this experiment, which is simple, but a very powerful remedy in cases of insomnia. The danger to be avoided is the depression of the heart if the applications are continued longer than ten or fifteen minutes at the outside.

DR. F. C. SHATTUCK: I quite agree with Dr. Putnam that my first case was not a typical one of myxœdema. Had it been typical I should not have sent it to him for an opinion. The absence of mental sluggishness and of subnormal temperature does not weigh much in my mind. Increasing experience is constantly showing us deviation from the symptoms as now laid down in the books. The Chairman saw this case; and I should be glad to have him give his opinion of it.

DR. FOLSOM: I have not consulted my notes; but I am quite sure that this is the fourth or fifth case which I have seen. The others were before anything was known about the thyroid-extract treatment. It seemed to me an unquestioned case of myxœdema. It is quite true that there was no mental torpor, in the strict sense of the word, to be observed; but I am inclined to think there was, in fact, because there was a certain amount of mental momentum, so to speak, got up by the exhilaration of the patient sufficient to mask a considerable degree of mental impairment. As it seemed to me, the essential points were such that I felt quite confident of the diagnosis of myxœdema.

DR. M. H. RICHARDSON showed a specimen of

AN APPENDIX OBLITERATED IN THE GREATER PART OF ITS LENGTH.

This specimen I removed this morning from a man thirty-eight years of age. The history of the case is very interesting in connection with the condition found at the operation. He had been subject for four years to occasional attacks of violent pain in the epigastrium. From the epigastrium the pain would go into the right iliac fossa. On Tuesday, February 7, 1893, he had an attack of "terrible pain" in the epigastrium, with vomiting. The fever lasted for several days. He supposed he had the colic, and treated himself for it. At the end of five days he sent for Dr. Marshall, of Lynn. He went on from bad to worse until Sunday, the 19th, when I saw him. The whole of the lower part of the abdomen from right to left was filled by a

large, fluctuating tumor. It pressed also upon the rectum. I opened, by an incision parallel to Poupert's ligament, without infecting the general abdominal cavity. The mass was made up of several abscess-cavities. The appendix could be felt, very large and thick, intimately adherent to the surrounding parts, so that it seemed to me inadvisable to make any prolonged efforts to separate it. One large tube was put down into the pelvis, and another toward the bladder. About the tubes sterile gauze was packed. The temperature went down after the operation, but about two weeks later there was a discharge of a pint of pus. After this he made a good convalescence.

On November 21, 1893, I examined him again. Since the operation he had been perfectly well till three weeks ago, when he had another spell that came on in the same way as the others had—with pain in the stomach. There was a little fever with this attack. Examination of the scar showed a well-marked ventral hernia, slight in extent, but unmistakable. There was no tenderness or pain. In view of the second attack, in its onset precisely like the first, and considering the hernia in the scar, I advised him to have an operation performed, first, for the radical cure of the hernia, and secondly, for the removal of the appendix, should it seem desirable after exploration. I cut out the scar tissue this morning, and came down upon the cæcum. There was no trace of the formerly extensive abscess, except a little induration behind the cæcum. The appendix was attached to the posterior and outer cecal wall by strong adhesions. These had to be cut before the appendix could be separated. There was nothing left of this organ except a small stump and a rounded extremity. Between the two, as the specimen shows, there was nothing but a fibrous cord, which may have been nothing but the remains of the inflammatory process. The condition of the appendix, in my opinion, would not have justified an operation for its removal, had we known it beforehand. The one attack of which he complained did not seem to me alone sufficient to justify this operation. The presence of the hernia was a real menace to his health, and alone justified the interference. Having opened the abdominal cavity, the removal of the fragments of the appendix seemed to me a rational procedure, especially as enough of the stump was left to account for the symptoms of the second attack.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, December 4, 1893, DR. J. B. AYER in the chair.

DR. W. E. FAY described

A CASE OF MALIGNANT ENDOCARDITIS.¹

DR. AYER: I should like to ask whether at any time the temperature rose more than once in the twenty-four hours and also whether it is not a very frequent symptom to have an irregular rise twice in the twenty-four hours?

DR. FAY: There was an absolutely constant afternoon rise, except when modified by quinine; one rise during the day, never two. I do not know how frequent it is to have the temperature rise twice in the twenty-four hours. In the *British Medical Journal* a

¹ See page 189 of the Journal.

year ago last March, in a paper by Dr. Frederick Taylor, is pointed out the long duration of the pyrexia which was seen in some cases, during which the fever was almost absolutely regular.

I should like to mention one case of endocarditis I came across among a number of cases from various sources of infection. The duration of the case was, within two days, the same as this one, and it passed through all the stages and was recognized in life.³

Two months after the illness began a rabbit was inoculated with a culture of a staphylococcus made from a drop of blood taken from the finger of the patient. In another month the rabbit died. There was an endocarditis of remarkable intensity, vegetations arising from the valves, and bloody effusion into the peritoneum. In nearly another month the patient died. Autopsy showed precisely similar conditions.

DR. M. H. RICHARDSON showed a specimen of

FIBROMA OF BREAST, WITH LARGE CYST SIMULATING CARCINOMA.

This specimen was removed two days ago from a woman of fifty-three. It was my intention to show this tumor in connection with a similar one removed from a woman of thirty-one. Both involved totally the left breast and both contained a hard mass distinct from the main swelling. The axillary glands were enlarged enough to be felt distinctly in each case. I advised operation in each. This specimen from the woman of fifty-three proves to be benign—diffused, intracanalicular fibroma—without a suspicion of malignancy; while the breast from the young woman contained a nodule of cancer three centimetres in diameter and was itself a mass of fibrous tissue formation.

Dr. W. F. Whitney's report is as follows:

"Mrs. B., age fifty-three. On section it was in general, firm and fibrous looking, and the surface was interspersed with numerous cysts of size varying from a pin's head to one of the size of a small egg; the lining of this was smooth and the contents thin and watery. Microscopic examination showed dilated ducts and acini of the gland lying in a matrix of dense fibrous tissue. Some of the dilated spaces were more or less sinuous, and suggested a growth into the lumen of a canal of fibrous tissue. The diagnosis is a chronic, diffuse, fibrous-tissue formation in the breast, with retention cysts. The whole of the gland was affected."

"Miss P., age thirty-one. The tumor of the breast and axilla from Miss P. showed a large, densely-fibrous growth occupying the greater part of the breast. At one part it was opaque, more homogeneous and grayish. Microscopic examination showed remnants of gland acini, surrounded by dense layers of fibrous tissue, with quite hyaline-looking walls. Involving these were irregularly-branching lines of solid epithelial cells. The axillary glands were enlarged, and contained large epithelial cells separated by a little fibrous-tissue stroma. The case is one of a cancer (rather of the medullary type) which has invaded a breast where had previously existed a chronic diffuse fibrous-tissue formation."

The interesting clinical question was that of diagnosis. In the younger patient there seemed a strong doubt as to the presence of cancer, though the enlarged axillary glands—much more pronounced than in the older woman—pointed more to a malignant tumor than the slightly enlarged ones in the older patient.

³ Referred to in *Sajous's Annual* for 1891.

I advised operation in the latter case because I believe that all mammary growths in women over forty should be explored most thoroughly; and in the former because, though in a young woman, the appearances were very suspicious. Cancer developing in a diffuse fibroma is very unusual in my experience; its occurrence in so young a woman emphasized the importance of removing such tumors early. Not that the danger of malignant degeneration is pressing; but unless we are able positively to exclude malignancy, we ought to remove, or at least, to explore, all suspicious tumors, even if they cause only discomfort and anxiety.

I have frequently found the axillary glands enlarged in benign tumors, where there is no reason for their presence beyond a possible irritation. This enlargement, if not one of irritation, is usually coincident with a swelling of the glands of the opposite axilla.

The slowness of growth was another point in favor of the benignancy of the cystic tumor. The cysts themselves are often so tense that it is impossible to tell whether they are the solid irregularities of cancer or not. Even after the removal of this specimen, it was impossible to exclude malignant growths until the tumor had been all cut to pieces and several questionable points had been examined microscopically. The mistakes likely to occur if the diagnosis rests upon sections made with a punch before operation are obvious. In the young woman's case the specimen removed by the punch very likely would have contained none of the malignant structures, and depending upon an apparently scientific demonstration of security, I should have allowed the patient to lose the favorable moment for operation. Not that the exploring punch is of no use. On the contrary, if it does catch the malignant neoplasm it is a demonstration that may be looked upon as final; if it does not, we must at times still make the radical incision.

In these operations now I close the wound without drainage. My experience in this procedure shows the rapidity with which a man's ideas may change. I do not feel ashamed to say that my views on many subjects are very different from what they were a year ago. I dare say that in a short time hence I may do these operations in a very different way from what I do them now, but it seems at the present time as if there were not much improvement to be made in the technique of operations of this sort. The mortality in breast-operations in my experience has gone down from four or five per cent., in the carbolic-acid times to practically no mortality in the last four years. We have also got rid of the disagreeable features of drainage by means of careful asepsis and absolute hæmorrhage. If we are careful not to operate in hopeless local disease or when there is hopeless disease of the internal viscera, the mortality must always remain very low indeed.

One thing I forget to say about the desirability of operating in cases of fibromata in young women in whom the question of disfigurement is important. Were it not for the cases in which Dr. Whitney has found malignant disease complicating these benign growths, I should not insist upon their removal except in the rarest instances. When the tumor is small and movable, I should not interfere. When the tumor does not demand the removal of the whole breast, the disfiguring scar can be avoided by Gaillard's method of post-mammary dissection.

DR. VICKERY: There is a kind of hard, painful

lump that quite young women have in their breasts. It is a source of great anxiety. When I was a student such lumps used to be left in; now a good many surgeons take them out. I should like to ask Dr. Richardson if he will tell us his view about the matter.

DR. RICHARDSON: My advice to a young woman with a fibroma of the breast is this: if it troubles her very much, she can easily and safely have it removed. In leaving it alone the dangers to health are very slight. The pain and tenderness are frequently the result of her constantly examining it; if she lets it alone, and if it is not very large, the tumor often disappears. They are sometimes very large. I have seen them occupying the whole breast, weighing perhaps a pound, though the ordinary fibroma is seldom beyond the size of a hen's egg. A tumor that causes discomfort ought to be removed because it can be done with great ease and safety. In none of these cases is excision necessary on account of the danger to life if you can be sure that no malignant complication exists.

Recent Literature.

Introduction to the Catalogue of the Collection of Calculi of the Bladder. By SIR HENRY THOMPSON, F.R.C.S., etc. London: J. & A. Churchill. 1893.

This little volume is nothing less than a summary of the entire experience of its eminent author with reference to operations for stone and foreign bodies in the bladder. It accompanies the more extensive catalogue which, prepared and revised with great care, was presented by Sir Henry, together with the cabinet containing his collection of calculi and foreign bodies removed from the bladder by him, to the Hunterian Museum of the Royal College of Surgeons in 1892. This collection represents the whole of Sir Henry's work in this department of surgery, from his first case in 1857, up to the date of presentation, which, with the additions made between that time and April, 1893, comprises 1,013 operations.

The "Introduction" furnishes statistical tables of the results of these operations and of the more important points connected with them, as well as comments by the author concerning the matters of especial importance in regard to the subject. We are glad to note, under the heading "Lithotripsy," that Sir Henry gives as his latest expression in the matter the full credit which is its due to the notable achievement of Dr. Henry J. Bigelow ("Litholapaxy").

Sir Henry's "Introduction," etc., is a *multum in parvo* which will well repay careful study, since it gives, even in this condensed form, a valuable record of part of the work of one of the most remarkable and talented of surgeons and men of our day.

A Practical Treatise on Materia Medica and Therapeutics. By ROBERTS BARTHOLOW, M.A., M.D., LL.D., Professor of Materia Medica, General Therapeutics and Hygiene in Jefferson Medical College, Philadelphia, etc. Eighth edition, revised and enlarged. New York: D. Appleton & Co. 1893.

The recent revision of the United States Pharmacopœia has led Professor Bartholow to bring out a new edition of this well-known and deservedly popular work: and we need only say that in it, he has adopted the metric system and included such of the newer remedies as he deems worthy of recognition.

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DISEASES DUE TO "HARD TIMES."

It would doubtless be an interesting study to investigate from the inductive side the morbidity in communities directly traceable to business depression; this, however, would require wide observation and careful collection and collation of data, and the subject would be at the best a very complex one.

The most that we can attempt to do on the present occasion is to approach the subject from the deductive side; given the want and distress into which large portions of communities are plunged from lack of work and lack of money, to deduce the necessary pathological consequences in accordance with well-known laws.

Seasons like that through which this country has been passing are times of great psychical depression. There is (or has been) profound discouragement among employers and employed; among men of business making no money (or losing), and workingmen idle, with distress and poverty before them. With multitudes there is paralysis of the higher incentives and emotional forces, and psychical failure and degradation.

Among the many startling things uttered by Senator Stewart, in his lengthy speeches before the Senate of the United States recently, was the statement that the mental stagnation, degeneration and darkness of the Middle Ages was principally due to diminished production of the precious metals and consequent depression of business and lack of remunerative employment for the masses.

Times of financial depression like the present are fraught with anxiety and worry among all classes of society; and anxiety and worry, along with want of nourishment and hereditary predisposition, are powerful factors in the production of insanity. "Low wages," says Maudsley, "mean poverty and bad nourishment, and lunacy shows a distinct tendency to go hand-in-hand with pauperism."

The statistics of our insane hospitals bear out this statement; nor can we be surprised at the large access-

sions to the ranks of the insane from the lower classes during the past year. When chronic worry coincides with chronic want of work, some form of mental degradation is almost sure to supervene, for "mental exercise is the true foundation of mental health."

If we may trust Huchard,¹ mental emotions (and he specifies chagrin, anxiety, disappointment, worry) may have a real and positive influence in the origin and development of *cardiopathies*, and, in particular, of *arterio-sclerosis*. The order of morbid events, according to this writer, is as follows: Spasm of the arterioles (due to the emotion), hypertension of the arterioles and capillaries, sclerosis of the arteries, sclerosis of the viscera. The existence of arterial spasm under the influence of even trifling emotion has been demonstrated by the experiments of Mosso by the aid of his plethysmographs. "If now," says Huchard, "you have a state of prolonged or chronic emotion, as where the person is in a protracted worry, or is profoundly, permanently disheartened by losses and adversity, you have a condition of almost permanent vascular spasm and of arterial hypertension."

We have not space here to give Huchard's explanation as to how this affects the vasa-vasorum and the nutrition of the arteries. He finds reason for the belief that strong and repeated emotion may determine cardiac affections by its incessant action on the peripheral circulatory system; "and this," he adds, "is one of the reasons why arterio-sclerosis is (according to my observations) so frequent in the medical profession, pre-eminently the kind of life entailing overwork and worry."

Doubtless, if this writer's views are correct, the past year, by its chagrins, anxieties and cares, must have been a very eventful year in the pathogenesis of arterio-sclerosis.

It hardly needs to be said that inebriety is a disease no less prevalent in hard times than in times of prosperity. Idle men naturally flock to the saloons, and evil and misery drive the poor and the desperate to seek solace and forgetfulness in strong drink.

Among the diseases to which times of great business depression have a causal relation are all those derangements of the alimentary canal and of nutrition which are the result of insufficiency or improper quality of the ingesta. That human beings this present winter in all our cities are without sufficient food is painfully known to physicians and all others who are brought into daily contact with the poor. In very many instances the physician feels that food and not medicine is needed. Many families, too proud to receive charity, are living on a starvation diet. They cannot afford meat, and they buy only the poorest, cheapest foods. Hence the evils attendant on anæmia and inanition are soon apparent. The poorly fed soon fall a prey to grave diseases (tuberculosis, pneumonia, typhoid fever, even influenza, etc.) because their vital resistance is weakened. Children brought up on a meagre diet become frail, sickly and neurotic. Are

we destined to witness, as the outcome of this long period of business depression, a generation of miserable candidates for tuberculosis, for hysteria — physically stunted, intellectually undeveloped, unfit to bear the burdens of life, a burden on society.

To the ills which we have mentioned, we might add all the pathological results of insufficient fuel and insufficient clothing.

Doubtless with the starting up of idle machinery all over the country, there is the promise of future prosperity; and the greatest boon which we can ask for the idle and unemployed is the hygiene of regular work, for this means plenty of food, enough clothing, strength of body and mental health.

THE SUPERVISION OF THE INSANE IN NEW YORK.

THE leading medical journals in New York continue to express thorough dissatisfaction with the State Commission in Lunacy, for the reasons which we have suggested in a previous number of the JOURNAL.¹ In a recent editorial in the *New York Medical Journal*, the statement is made that on all sides in the State the tendency of the Commission in Lunacy to evolve itself into an enormous political machine has been subjected to severe criticism from honorable men of every profession, and that the voice of reproof grows louder every day as the lowering ambitions of the commissioners become clearer and clearer.

A bill has been proposed in the Assembly to abolish the Commission in Lunacy, and to confer upon a committee of the State Board of Charities — really upon the secretary of such a committee — the work of supervising the care of the insane in the State institutions. This plan is essentially the same as those which have proved so satisfactory in Massachusetts and Pennsylvania; and the reputation of the New York State Board of Charities for excellent work is such that it will be quite safe to place additional responsibility in its hands.

Moreover, the Board has already distinguished itself for investigations and recommendations with regard to providing for the insane, and has a familiarity with the subject that must prove of great practical use, if it can be made available. In continuation of the studies of the Board, Dr. Stephen Smith, formerly State Commissioner in Lunacy, has formulated a number of suggestions² for improving the administration of insane asylums and for increasing the comfort and chances of recovery of the insane, in which he has especially recommended the principles embodied in the proposed law.

We have in this State been so fortunate in keeping politics out of our public institutions and in having the management of our State Charities in the hands of public-spirited persons devoted to their work, that it is difficult to appreciate how important is the issue at

¹ Huchard: *Maladies du Cœur et des Vaisseaux*, Paris, 1890.

² Vol. cxxix, p. 608.

³ *American Journal of Insanity*, January, 1894, pp. 325-344.

stake in New York. The proposed change in the law is in the right direction; and we hope that it may be soon brought about.

MEDICAL NOTES.

A NATIONAL BUREAU OF HEALTH. — We learn that the bill presented to Congress by a committee of the New York Academy of Medicine, for the establishment of a Bureau of Health, has been so essentially modified that the new draft is much more likely to represent the views of the various health bodies of the country, and, in consequence, to have favorable action at the hands of the authorities at Washington.

YELLOW FEVER AT RIO JANEIRO. — The yellow fever epidemic at Rio Janeiro has started up again, and is increasing to a considerable degree, there being an average of about forty new cases each day. One case has occurred on the United States cruiser *Newark*, and the vessel has been ordered to Montevideo to be disinfected.

SUCCESSOR TO PROFESSOR MOLESCHOTT. — Professor Luigi Luciani, of Florence, has been appointed to the Chair of Physiology in the University of Rome, to succeed Professor Moleschott.

THE STUDY OF LEPROSY IN ICELAND. — The Danish Parliament has voted the sum of \$840 for the expenses of a medical mission to Iceland for the purpose of studying the extent to which leprosy still prevails on that island. The mission, which is to consist of Drs. Ehlers and J. Ulrich, of Copenhagen, with an Icelandic physician as interpreter, will make its investigation in July and August of the present year.

AWARD OF THE RIBERI PRIZE. — The Riberi Prize, founded by Prof. Alessandro Riberi, has just been awarded to Dr. Camillo Golgi, Rector of the University of Pavia, and Professor of General Pathology, for his essay upon Malarial Fever. The prize amounts to \$4,000, and is open to international competition every five years. The subject must be one of purely medical interest, and the essay be the result of original research. There were three essays this year deemed worthy of final consideration, that by Dr. Golgi being finally awarded the prize. The others were by a Frenchman and a German.

MEDICAL PRACTITIONERS IN SCOTLAND. — The last volume of the census of Scotland, for the year 1891, gives a list of 7,709 medical practitioners, or one to every 522 inhabitants. This proportion seems rather large until it is noted that the list of medical practitioners includes physicians, surgeons, dentists, veterinary surgeons, sick-nurses, midwives and invalid attendants. An analysis shows that there are but 2,595 physicians and surgeons, or one to every 1,550 inhabitants. There were only twelve women physicians.

CORONERS OR MEDICAL EXAMINERS? — The clumsiness and inefficiency of the old coroner system is be-

coming each year more widely appreciated. The committee appointed by the Medico-Chirurgical Society of Montreal to suggest modifications in the present law relating to coroners' inquests has recommended that the office of coroner be made a purely judicial one; and (1) that salaried medical examiners be appointed to investigate all deaths occurring under circumstances calling for medico-legal investigation under any act, and that these officers be given authority to make such medical examination of the body as may be necessary to determine whether death was due to violence or not; (2) that in every case the medical examiners report the result of their examination to the coroner or other judicial officer charged with investigating the legal side of such cases, who, in case of violent death, shall make such investigations and take such measures as are necessary for the proper administration of the law.

HENOCH'S SUCCESSOR. — Prof. Johann Otto Leonhard Heubner, of Leipsic, has finally accepted the chair of Children's Diseases at Berlin made vacant by Henoch's retirement. At first he declined the position, owing to its being only an Extraordinary Professorship, while his own position at Leipsic was that of Ordinary Professor. Heubner, who is fifty-one years old, has done practically all his work in Leipsic. He was assistant to Wunderlich in 1868 and private docent in 1869.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the six days ending at noon, February 20, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 23, typhoid fever 2, small-pox 7. There was one death from small-pox. The small-pox cases were reported at about the same time from three different parts of the city. There was some difficulty in accounting for one of the cases, that from the South End, until the arrival at the hospital of another patient from the West End who had acquired the disease from visiting the family in South Boston who were supposed to be ill with chicken-pox. The South End patient was delighted to see in the West End patient a friend whom he had visited some days before, and the chain of evidence was complete.

SMALL-POX IN MASSACHUSETTS. — During the past six days there have been reported to the State Board of Health six cases of small-pox from places outside of Boston. One case in Worcester and five cases in Holyoke.

A BEQUEST TO THE HARVARD MEDICAL SCHOOL. — The will of Rev. William C. Moseley, of Newburyport, bequeaths \$50,000 to Harvard College, to endow a professorship in the Medical School. Other bequests in the will were \$20,000 to the Massachusetts General Hospital, for beds in memory of his son; \$10,000 to the Boston Lying-in Hospital; \$10,000 as a trust to the Perkins Institute for the Blind; and \$10,000 to the Anna Jacques Hospital, of Newburyport.

NO MEDICAL STUDENTS TO BE ALLOWED IN THE CHARITY CLUB HOSPITAL.—The Women's Charity Club, of Boston, has voted, 43 to 38, forbidding all medical students the privileges of clinical instruction at operations performed in the hospital of the club. This is the final decision of the club on the question, which has been before it for some time, whether small numbers of last-year or graduate students might not be allowed to witness gynecological operations. The privilege was asked especially for students of Tufts Medical School, but no distinction has been made, and all are to be excluded.

THE FEET OF CAMBRIDGE SCHOOL-CHILDREN.—An order was passed last week in the Cambridge School Committee authorizing Dr. G. W. Fitz to make examination in the Peabody School of that city, of the rapidity and touch of pupils, and to take measurements of their feet. The latter statistics are to be taken in reference to the development of the arch of the foot.

VIVISECTION IN THE PUBLIC SCHOOLS.—The Committee on Education, of the Massachusetts Legislature, gave a hearing last week on the proposed bill to prohibit dissection or vivisection in the public schools. The bill was favored by representatives of the Society for the Prevention of Cruelty to Animals on the grounds, that vivisection is cruel and unnecessary, and because it teaches children to practise cruel acts, and is calculated to cause suffering to animals, and does no good.

COMMITTEE ON PUBLIC HEALTH HEARINGS.—The Committee on Public Health, of the Massachusetts Legislature, gave a hearing on Monday, February 19th, upon a proposed bill for the establishment of hospitals or wards in the various cities of the Commonwealth for the treatment of venereal disease. The hearing of the same committee upon a proposed bill for the construction and maintaining of hospitals for contagious diseases in the various cities and towns, said hospitals to be under the control of the local boards of health, which was ordered for the same day, was postponed to March 9th. The hearing on public vaccination was postponed to March 5th.

Miscellany.

PRESIDENT ELIOT ON THE REGULATION OF ATHLETIC SPORTS.

In the annual report of Harvard College for 1892-93, just issued, President Eliot devotes considerable space to a consideration of College Athletics. According to our custom, we shall notice this report at length. This week we can only give the conclusions reached by the President in regard to the regulations of College Athletics. Under the head of "Possible Checks on Excess in Sports," he says:

"If the evils of athletic sports are mainly those of exaggeration and excess, it ought not to be impossible to point out and apply appropriate checks. The fol-

lowing changes would certainly diminish the existing evils: (1) There should be no Freshman intercollegiate matches or races; (2) no games, intercollegiate or other, should be played on any but college fields, belonging to one of the competitors, in college towns; (3) no professional student should take part in any intercollegiate contests; (4) no student should be a member of a university team or crew in more than one sport within the same year; (5) no foot-ball should be played until the rules are so amended as to diminish the number and the violence of the collisions between the players, and to provide for the enforcement of the rules; (6) intercollegiate contests in any one sport should not take place oftener than every other year. Finally, if trial shall prove the insufficiency of all these limitations, intercollegiate contests ought to be abolished altogether.

"These suggestions are by no means of equal importance; some of them concern many persons, and some but few; but all or any of them could be put into force by a single college without diminishing that college's chances of success in such intercollegiate contests as it undertook.

"Different persons will undoubtedly strike the balance differently between the advantages and disadvantages of athletic sports; but one important fact will for many people incline the balance in favor of the sports—the fact, namely, that there has been a decided improvement in the average health and strength of Harvard students during the past twenty-five years. The gain is visible in all sorts of students—among those who devote themselves to study, as well as among those who give much time to sports. In 1888 the Faculty passed a useful vote to the effect that all holders of scholarships were expected to present themselves twice every year to the Director of the Gymnasium for a physical examination. The Faculty passed this vote under the impression that the bodily condition of these hard students would be found to be unsatisfactory; but it has turned out that, though some were weak, others were strong, and that the development and condition of the larger number were fairly good."

THE PATHOLOGY OF BICYCLING.

THE list of diseases of occupation has received an addition, this time a whole pathology; and the bicycle is to blame. The fear of kyphosis has terrified the young man into an erect position upon his wheel; but now a French physician brings forth an array of lesions caused by riding the velocipede which is suggestive of the extent of the present passion of Parisians for the wheel.

Dr. Pezzer¹ reports a considerable series of cases where more or less injury has been caused by the pressure of the saddle upon the soft or bony parts of the rider. Superficial lesions he has seen almost entirely on female riders; they consist of inflammatory affections of the labia majora, the urethra and adjacent parts. Twice he observed acute lesions of the hæmorrhoidal veins, with tumor and hæmorrhage in men; twice, also, acute retention of urine from prostatic irritation. Many patients were troubled by prolonged erections while riding, due to impeded venous return. There were several cases of annoying anæsthesia of

¹ Annales des Maladies des Organes Génito-Urinaires, January, 1894.

the regions supplied by the pudic nerves. The more serious lesions, however, occurred in the urethra; caused in women by friction, and in men by prolonged pressure on the bulbous portion. One patient suffered from ystitis after riding; and there were several cases of ruptured urethra (periurethral abscess), and one case of acute dislocation of the kidney.

It will be seen that after all bicycling is but little less dangerous than foot-ball.

THE PRESENT GENERATION.

AN overtaxed nervous organization is not the peculiar possession of the American people of to-day, as has been claimed. In his opening lecture on Therapeutics Landouzy gave the following picture of "the present generation of neurotics, which numbers so many youths of enfeebled ardor, of waning desires, of sterile intellects, and of saddened, restless and suspecting character; so many young women who are always anxious, dissatisfied and of constant functional instability, never ill but always disordered; so many impatient, capricious women, at once charming and unendurable, of strange *états d'âme*, ruled by casuistry, full of sparkling laughter and of ready tears, with high-pitched voice (exhausting but inexhaustible) whose talk is inconsequential, discursive and hyperbolic; so many women who are despondent, never satisfied, in love with realism not with the ideal, who will soon have eyes only for the impressionists, taste only for symbols, and passion only for literature and music of a certain kind; so many beings needlessly discouraged, faltering and baffled in the struggle for life."

ANTI-CHOLERAIC INOCULATION.

THE *Lancet* publishes the following communication from Haffkine, reporting upon his work of anti-choleraic inoculation:

"Anti-choleraic inoculations continue to occupy all my time, and the process has now been applied to about 16,000 persons. I try to work on as large a scale as possible, because it is impossible to know beforehand in what part of the country cholera will make its next appearance. I append the names of the places where inoculations have been freely made up till now: Agra, Alligarh, Lucknow, Delhi, Sanawar, Karsauli, Dagshai, Patiala, Rajpooorah, Chirat, Jhansi, Simla, Jatagh, Rawal-Pindi, Murree, Abbottabad, Peshawur, Sangrur, Nowshera, Naini-Tal, Almora, Ranikhet, Dworahat, Kainur, Pauri, Sakniana, Mussa Gali, Srinagar (Garhwal), Tehri, Mussoorie, Dehra Dun, Hardwar, Lahore and Meen Meer. In all these localities it has been attempted to make the inoculations upon persons who are living in precisely the same environments as their uninoculated fellows; that is to say, I have selected half of a regiment, of a school, of a prison, or of a village for treatment. A record of the names, social position and surroundings, symptoms which appeared, etc., has been carefully kept of each case, with most minute details, and copies of these records have been given to the medical officers in these localities; and it is from these gentlemen that I hope to receive clinical observations upon the subjects of operation when next an epidemic appears. The constitutional

differences displayed by man with regard to cholera are so large that no experience gathered from one, two, or ten individual cases would give even the most general result; the probability being that all the ten selected persons might be constitutionally incapable of being affected by the disease in the recognized manner. On the other hand, operations on animals on account of the particularity of the symptoms which result, are always open to discussions. The results of experience now placed before the eyes of the medical service in India, will bring about, I hope, in the near future a direct revolution in our ideas of the nature of cholera and the means of combating the disease."

A MEMORIAL SKETCH.

WILLIAM F. HUTCHINSON, M.A., M.D.

DR. WILLIAM F. HUTCHINSON died suddenly on September 30, 1893, at Providence, R. I. He had spent the whole day in the usual routine, practising and writing letters, and after dinner made a social call.

He had organic disease of the heart, and several times has had attacks in consequence, in which he was attended by his friend, Dr. Remick. Dr. Hutchinson was sick only fifteen minutes, being conscious to the last. He greeted his medical adviser pleasantly, saying, "Too late this time, I feel I am going, it is filling up gradually, I cannot breathe."

These were his last words, after which he expired, without a struggle, genial and social till the last, just as his life had been. Our departed friend was so talented that it is impossible to say where he excelled most. He was a jovial companion, a true friend, a linguist, a journalist, a tourist, a patriot, a scientist, a true physician and as a specialist an authority in electricity.

He was the friend of his patients, and prominent in all public benevolent enterprises of the day; as a citizen, he was scrupulously honest, generous, and public-spirited, warm-hearted, cordial and genial. As a Freemason he had received the thirty-third degree.

Dr. Hutchinson was born in Oswego, N. Y., October 28, 1838. His collegiate education was obtained at the University of Pennsylvania; and after receiving the Bachelor's and Master's degrees at that institution, he pursued the study of medicine at the Buffalo Medical College and also abroad in the most celebrated of the French and German universities.

Since the close of his student career his life has been a most active one in the service of his country, in both army and navy, in the work of his chosen profession, in literature, art and travel.

He was a linguist, and had travelled much, in fact, had been almost everywhere, particularly in Germany and the West Indies. His memory was wonderful; he could advise about all routes in travelling with more exactness than an excursion agent, tell the time-tables, best ways to take, the names of hotels and their charges. In the West India Islands he was acquainted with every place and everybody, and even could tell of individuals, their habits and their state of health.

As a patriot he was a veteran of the army and navy, and thereby became a member of the Loyal Legion. When the Civil War broke out he went to the front with the Twenty-second Regiment of New York Volunteers, as Assistant Surgeon, in May, 1861. At the battle of Antietam, while giving a drink of water to a wounded Confederate soldier, Dr. Hutchinson was struck by a bullet just over the heart.

At the first battle of Bull Run he was taken prisoner of war; and from July 21, 1861, spent nine weeks in Libby Prison, when he used an opportunity to escape. He participated in the battles of Cedar Mountain, Rappahannock, Catlett's Station, Yorktown and South Mountain, Antietam and second Bull Run. At the latter place he was captured

again, but escaped three days after. He was promoted August 18, 1862, to Surgeon and later to Brigade-Surgeon. He was in charge of Falls Church U. S. A. General Hospital from March to August, 1862, also Provost-Marshal of Fairfax County and commanding Post at Falls Church; on duty at the office of the Surgeon-General and at U. S. A. General Hospital, Portsmouth Grove, R. I. He was wounded several times, and as a consequence suffered every winter afterwards during his life, which necessitated a sojourn in a warmer clime. For this reason he generally spent two months from January in some parts of the West Indies.

On April 13, 1863, by act of the War Department, he was discharged from the army with the rank of Colonel, and transferred to the navy as Acting Past-Assistant Surgeon on the sloop-of-war *Vincennes*. He remained with this branch of the service throughout the remainder of the war. Next he was on the U. S. frigate *Potomac* at the siege of Port Hudson, La., at siege of Vicksburg, and at the battle of Mobile Bay, where he was wounded and taken prisoner again. From the navy he was honorably discharged in December, 1869.

The next four years of his life were passed at Minneapolis, where he acquired an extensive practice.

In 1873 Dr. Hutchinson came to Providence, where he has since resided, except for his frequent European and South American trips. He made electricity a specialty.

He was Assistant Secretary-General of the Pan-American Medical Congress, the organization of which society owed much to his efforts, as he was the representative who brought about the co-operation of the medical men in the Spanish American countries. He was also Vice-President of the American Electro-Therapeutic Association and a Fellow of the Société Française Electro-Thérapeutique.

As a journalist he was considered particularly clever, and for a considerable time was attached to the regular staff of the *Star and Press*. He was formerly an editor of the old *American Magazine*; and up to the time of his death he was the associate editor of the following periodicals: *New England Medical Monthly* and *The Prescription*, *The Times and Register* (Philadelphia), and *Journal of Bacteriology* (New York).

He has written many valuable editorials and other medical articles, one of his last was "Electrical Anæsthesia by means of the Singing Rheotome," and also a text-book, "Practical Electro-Therapeutics," which has had a large circulation. Among his other works are many interesting novels and volumes of travel in South America. His principal work was "Under the Southern Cross." His style of writing is vividly descriptive, and very interesting to read.

Dr. Hutchinson was a prince of good fellows, and moved in the best society. He had been one of the best known men in Grand Army circles. Immediately after his arrival in Providence, he joined Slocum Post, and afterwards became its commander. Later he organized Arnold Post, of which he was also commander for several years. He was a member of the Rhode Island Historical Society, of the Rhode Island Medical Society; and at the organization of the medical department at Tufts College he was chosen a professor.

The funeral of Dr. Hutchinson took place at Providence on Tuesday, October 3d, with military honors. After prayer by the Rev. Mr. Bassett at the house, 78 Mawney Street, at 2 o'clock his remains were taken to the Church of the Epiphany, where the funeral service was held. After all the seats in the church had been filled, Rev. Mr. Bassett and Chaplain Webb escorted the remains to the altar, and the two ministers proceeded with the Episcopal burial service. The solemn rite was very impressive by additions of very tasteful organ preludes and singing of a male quartet. Beautiful flowers covered the coffin. After the service the military cortège followed the remains to Pocasset Cemetery, where the burial service of the Grand Army Veterans was held and the body placed in the earth with the customary military honors.

ROBERT NEWMAN, M.D., NEW YORK.

Correspondence.

THREE UTERINE PREGNANCIES DURING AN EXTRA-UTERINE PREGNANCY.

WORCESTER, MASS., February 15, 1894.

MR. EDITOR:—The enclosed cutting from an old newspaper¹ is certainly curious, and may be interesting to some of your readers.

DIED.

In Uxbridge, Feb. 1, Mrs. Ruth Ellis, wife of Mr. Charles Ellis, 32. It had been her singular lot, for nearly eight years, to have borne an extra-uterine foetus of full size, during which period she had become the mother of three healthy children. Her health evidently declining during the last fall, from its presence, no alternative seemed to be left but its removal, which was effected on the 31st of December, by the Doct's. Miller, of Providence, R. I., and Franklin, Ms. The subsequent discovery, however, of a free communication, which had been previously formed by ulceration, between the small intestine and the sac, and by which all nutriment, received into the stomach, passed through the artificial opening, destroyed all hopes which her physicians, at the successful termination of the operation, may have been disposed to entertain of her eventual recovery. Her sufferings were less than before the operation, but emaciation progressed rapidly; and became extreme, and she at length sank. Her life having been doubtless prolonged by the serenity of mind and calm resignation with which she awaited her fate. (Com.)

I have not found any record of the case in text-books and monographs. Very truly yours,

GEORGE E. FRANCIS, M.D.

¹ The Massachusetts Spy, Worcester, Second Month (Feb.) 10, 1841. Its motto was, "The liberty of the press is essential to the security of freedom."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 10, 1894.

Cities.	Estimated population for 1894.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal Diseases.	Diphtheria and croup.	Scarlet fever.	
New York . .	1,891,306	868	350	17.04	22.44	1.60	8.76	1.92	
Chicago . . .	1,438,000	—	—	—	—	—	—	—	
Philadelphia . .	1,115,562	474	169	9.66	19.95	.83	5.25	.84	
Brooklyn . . .	978,884	585	137	11.07	24.37	1.36	6.46	.61	
St. Louis . . .	560,000	—	—	—	—	—	—	—	
Boston	487,387	245	73	11.07	24.19	.41	3.28	3.69	
Baltimore . . .	500,000	—	—	—	—	—	—	—	
Washington . .	308,481	130	27	10.74	17.71	.77	5.89	1.54	
Cincinnati . . .	305,000	123	39	8.10	18.63	2.43	1.62	—	
Cleveland . . .	390,000	94	—	10.66	16.96	—	6.36	—	
Pittsburg . . .	263,709	—	—	—	—	—	—	—	
Milwaukee . . .	250,000	80	42	22.50	12.50	6.25	5.00	1.25	
Nashville . . .	87,764	32	11	—	31.30	—	—	—	
Charleston . . .	65,165	40	9	7.50	7.50	2.50	—	2.50	
Portland	40,000	20	4	10.00	15.00	—	5.00	5.00	
Worcester . . .	96,217	31	9	19.34	22.61	—	9.69	—	
Fall River . . .	87,411	35	14	11.44	22.88	2.88	6.72	—	
Lowell	87,191	—	—	—	—	—	—	—	
Cambridge . . .	77,100	29	12	20.70	10.35	6.90	—	18.60	
Lynn	62,666	10	4	30.00	—	—	10.00	—	
Springfield . .	48,684	13	3	—	22.07	—	—	—	
Lawrence	48,365	15	8	—	20.00	—	—	—	
New Bedford . .	45,886	19	7	5.26	10.52	5.26	—	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	10	0	—	—	—	—	—	
Brookton	32,140	12	3	8.33	—	—	8.33	—	
Haverhill	31,396	4	0	—	23.10	—	—	—	
Chelsea	30,264	10	0	—	10.00	—	—	—	
Malden	29,394	7	1	—	28.56	—	—	—	
Newton	27,556	4	0	—	25.00	—	—	—	
Fitchburg	27,148	—	—	—	—	—	—	—	
Taunton	26,972	9	1	—	33.33	—	—	—	
Gloucester	26,688	8	1	—	—	—	—	—	
Waltham	23,068	2	0	—	—	—	—	—	
Quincy	19,642	6	1	33.33	—	—	16.66	—	
Pittsfield	18,802	4	1	—	—	—	—	—	
Everett	16,585	8	1	12.50	—	—	—	12.50	
Northampton . .	16,381	2	0	—	50.00	—	—	—	
Newburyport . . .	14,073	5	2	—	40.00	—	—	—	
Amesbury	10,920	2	1	50.00	—	—	—	—	

Deaths reported 2,718; under five years of age 768; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhoeal diseases, whooping-cough, erysipelas and fever) 342, acute lung diseases 570, consumption 313, diphtheria and croup 160, scarlet fever 42, diarrhoeal diseases 38, measles 33, typhoid fever 23, whooping-cough 16, cerebro-spinal meningitis 11, small-pox 9, erysipelas 8.

From measles New York 19, Milwaukee 8, Philadelphia 5, Brooklyn 1. From typhoid fever Philadelphia 5, Washington 4, Boston, Cincinnati and Cleveland 3 each, Charleston, Worcester, Fall River, Lynn and Quincy 1 each. From whooping-cough Boston 4, New York, Philadelphia and Brooklyn 3 each, Cincinnati 2, Cleveland 1. From cerebro-spinal meningitis New York 5, Worcester 2, Cleveland 1. From small-pox New York 9. From erysipelas Brooklyn 4, New York 2, Philadelphia and Boston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending February 3d, the death-rate was 20.0. Deaths reported 4,012; acute diseases of the respiratory organs (London) 385, whooping-cough 158, diphtheria 109, measles 54, scarlet fever 45, fever 41, diarrhoea 34, small-pox (Birmingham 5, West Ham 2, London, Bradford and Gateshead 1 each) 10.

The death-rates ranged from 13.3 in Blackburn to 29.2 in Liverpool; Birmingham 20.9, Bradford 16.5, Croydon 14.4, Hull 23.8, Leeds 18.6, London 19.4, Manchester 19.4, Newcastle-on-Tyne 17.6, Nottingham 17.7, Portsmouth 18.9, Sheffield 18.6, Sunderland 16.5.

METEOROLOGICAL RECORD,

For the week ending February 10, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S... 4	29.80	32	37	27	81	94	78	N.W.	N.W.	8	9	O.	N.	0.11
M... 5	30.28	16	22	11	52	55	54	N.	W.	17	10	F.	C.	0.07
T... 6	30.36	21	33	9	44	60	54	W.	S.W.	3	12	O.	C.	
W... 7	30.10	35	45	25	74	69	72	S.W.	S.W.	13	17	C.	O.	
Th... 8	29.96	43	50	36	76	62	69	S.W.	W.	10	12	E.	C.	
F... 9	30.07	36	39	32	74	66	66	N.	N.E.	3	23	O.	R.	0.23
S... 10	29.84	35	38	32	100	95	98	E.	N.W.	15	7	R.	O.	0.24
														0.72

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 10, 1894, TO FEBRUARY 16, 1894.

Leave of absence for one month and ten days, to take effect upon the adjournment of the Eleventh International Medical Congress, to be held at Rome, Italy, March 29 to April 5, 1894, is granted COLONEL JOSEPH R. SMITH, assistant surgeon-general.

Leave of absence for one month is granted CAPTAIN REUBEN L. ROBERTSON, assistant surgeon, U. S. A., with permission to apply for an extension of one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 17, 1894.

A. F. PRICE, surgeon, ordered to the Torpedo Station, Newport, R. I.

H. E. AMES, surgeon, detached from Torpedo Station and to the "Richmond."

M. W. BARNUM, assistant surgeon, ordered to temporary duty on the "Ranger." Upon the reporting of relief detached from the "Ranger," ordered home and wait orders.

G. T. SMITH, passed assistant surgeon, detached from Naval Hospital, Chelsea, and ordered to the "Ranger."

M. R. PIGOTT, assistant surgeon, detached from "Richmond" and to Naval Hospital, Chelsea.

T. B. BAYLEY, passed assistant surgeon, detached from the "Machias" and to the "Richmond."

DEATH.

JAS. F. KRENEY, passed assistant surgeon, died on board the U. S. S. "Ranger," February 10, 1894.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, February 20, 1894, at 8 o'clock, P. M.

Dr. E. N. Whittier: "Digestive Paresis." Discussion opened by Drs. E. G. Cutler and W. W. Gannett.

Dr. J. G. Mumford: "Compound Fractures." Discussion opened by Drs. A. T. Cabot and R. W. Lovett. Dr. Goldthwait will show a new method for the direct fixation of the fragments in severe fractures of the long bones.

Dr. J. H. Wright will show cultures from "Gonorrhoea." Members are requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., Secretary.

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Wednesday evening, February 28th, at 8 o'clock, by Prof. E. S. Wood. Subject, "Urinary Diagnosis." Physicians are cordially invited.

RECENT DEATHS.

SAMUEL MAGNER DONAYON, M.D., M.M.S.S., died in Quincy, Mass., February 19th, aged forty-two years. He was town physician of Quincy for a number of years and was appointed City physician the first year of municipal government, and held the position to the time of his death. He was one of the visiting physicians to the Quincy City Hospital.

AUGUST HIRSCH, M.D., professor of special pathology and therapeutics and of the history of medicine in the University of Berlin, died January 28th, aged seventy-seven years. His great renown was gained by the publication in 1859 of his invaluable hand-book of "Geographical and Historical Pathology." Subsequent to this he was a member of several German Scientific Commissions, notably the German Imperial Cholera Commission in 1873. He represented the German Government at the International Sanitary Conference at Vienna.

FRANCISCO ALONZO RUBIO, M.D., professor of obstetric medicine in the University of Madrid, died recently. He was President of the Royal Council of Public Health, President of the Royal Academy of Medicine and perpetual President of the Spanish Gynecological Society.

BOOKS AND PAMPHLETS RECEIVED.

Tariff Reform: A Manufacturer's Point of View. By Arthur T. Lyman. 1894.

Hernia and Its Mechanical Treatment. By John B. Walker, M.D. Reprint. 1894.

Non-Malignant Tumors of the Larynx. By W. Scheppegegrell, A.M., M.D., New Orleans, La. Reprint. 1893.

A Case of Ringworm of the Scalp Stimulating Alopecia Areata. By Henry H. Whitehouse, M.D. Reprint. 1893.

Where to Send Patients for Water Cures and Climatic Treatment. By Dr. Thomas Linn. London: Henry Kimpton. 1894.

Establishing a New Method of Artificial Respiration in Asphyxia Neonatorum. By J. Harvie Dew, M.D., New York. Reprint. 1893.

On Methods Used and Results Obtained in Making Germicidal-Efficiency Tests of a Disinfectant for Use in Railway Sanitation. By William T. Sedgwick, Ph.D. Reprint. 1893.

Operative Surgery. By Th. Kocher, M.D., Professor at the University and Director of the Surgical Clinic at the Bern University. With one hundred and sixty-three illustrations. New York: William Wood & Co. 1894.

Philadelphia Hospital Reports, Vol. II, 1893. Edited by Charles K. Mills, M.D., Member of the Neurological Staff, and James W. Walk, A.M., M.D., one of the Directors of Charities and Correction. Philadelphia: Printed by J. B. Lippincott Co. 1893.

The National Dispensatory, Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopoeias of the United States, Great Britain and Germany, with numerous references to the French Codex. By Alfred Stillé, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine in the University of Pennsylvania; John M. Maisch, Ph.D., Late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, and Henry C. C. Maisch, Ph.G., Ph.D. Fifth edition. Enlarged and revised in accordance with the Seventh Decennial Revision of the United States Pharmacopoeia. With three hundred and twenty illustrations. Philadelphia: Lea Brothers & Co. 1894.

Original Articles.

CASE OF FATAL HÆMORRHAGE FROM THE LEFT LATERAL SINUS, CAUSED BY A BLOW ON THE JAW.

A. H. L., a tall, athletic student, aged nineteen, was struck in a friendly sparring bout upon the left jaw by the right hand of his opponent. The blow was delivered very nearly straight from the shoulder, and over the uplifted hands of the recipient, whose head was bent forcibly backward by the impact. The fist in striking was pronated. Large gloves were used. The patient on receiving the blow commented in a natural manner upon its excellence, and asked with which hand it had been struck; immediately after this he said that he felt queer, then put both hands to his head, jumped up and down several times, reached out his hand for the wall, staggered and fell unconscious. The accident occurred about five in the afternoon, Tuesday, February 13, 1894.

Efforts at resuscitation on the part of the students proving ineffectual, Dr. Lamarche was summoned, who advised removal to the patient's room. From this time on consciousness was not recovered. The breathing became stertorous; the pupils were first dilated, then contracted. Within about four hours rigidity had appeared in all four extremities, preceded by restlessness. Drs. J. L. Hildreth and J. Homans were called in consultation. The rigidity became more marked, the toes at midnight being drawn down violently. At one o'clock in the morning Dr. Walton was called to advise regarding localization and operation. Dr. Pease was also summoned to assist in case of operation. The condition at this time was as follows: all four extremities were in a condition of tonic rigidity, the legs stiffly extended, the feet in a condition of plantar reflexion, the left great toe being in addition drawn up spasmodically. Clonic movements of the right hand were also superimposed upon the tonic rigidity of this extremity. The elbows were flexed, the hand clenched with the thumbs inward. There was no trace of spasm or paralysis of the face. The eyes were turned somewhat to the left, without strabismus. The pupils were alike, reacting only slightly to light. The neck was flexible, and there was no apparent irregularity of the cervical vertebræ. The unconsciousness was complete; the breathing heavily stertorous, abdominal, with moaning on expiration. There was a tendency to Cheyne-Stokes respiration. Both pupils were large, the left perhaps a trifle the larger. There was a tendency to lateral nystagmus. The knee-jerk could not be obtained on account of the position of the limbs, but continual ankle-clonus was present. There was no priapism. The pulse was 96, full and strong. The temperature was 101°. There had been no bleeding from the nose or ears, no subconjunctival hæmorrhage.

It was concluded that a large hæmorrhage had taken place, involving the base of the skull and extending into the vertebral canal. The most probable starting-point of the hæmorrhage was deemed a fracture of the left glenoid fossa from the impact of the condyle of the jaw, an adjacent vessel being ruptured. Operation was seriously considered, but was decided to be inadvisable, as there seemed no chance that the essential part of the clot could be removed, namely, that pressing upon the pyramidal tract in the medulla oblongata, an opinion borne out by the autopsy.

The condition remained practically unchanged until the next morning. The ice-bag had been applied to the head, counter-irritants and heat to the lower extremities.

Wednesday (second day) spasms recurred at 4.45 and 5.30 A. M. At 7.30 the patient was breathing quietly, the eyes slightly open. There was profuse perspiration. Temperature 102.2°, pulse 100, respiration 28. At 8 A. M. all extremities were still rigid, the rigidity in the right arm and leg being most marked, with spasmodic tendency in these parts. The pulse varied from 76 to 90. At noon the breathing was still quiet, with slight snore on inspiration and low moan on expiration. The pupils were now somewhat dilated, alike. During the afternoon the pupils were widely dilated. The rigidity remained the same, with slight twitching of the right hand. The head was drawn somewhat to the left. The temperature fell to 101.2°. During the night of this day the rigidity lessened; the pupils were widely dilated, and responded slightly to light. The urine had been passed involuntarily before the catheter was used. The jaws were less rigid, but the patient could not swallow. The head was turned somewhat to the left, the eyes markedly so. Attacks of choking occurred during the night.

Thursday (third day) the temperature rose to 102°, the respiration to 30. Breathing stertorous. Head straight. About four ounces of urine drawn. The rigidity had entirely disappeared, leaving all four extremities almost completely relaxed, and paralyzed. The knee-jerk absent. Nutrient enemata not retained.

Operation was carefully considered on this day, Dr. M. H. Richardson being called in consultation regarding this point. It was again decided inadvisable, for the reasons already stated.

Friday (fourth day) the condition had remained unchanged, excepting that twitching of the right eyelid and right angle of the mouth had appeared, with slight spasm of the left upper lip. Very slight spasm of the right leg and hand appeared at the same time. The knee-jerk was absent. The pupils were alike, rather small, the eyes turned somewhat to the right, the left not following perfectly. At 11 A. M. the respiration was very shallow; the pulse varied from 58 to 84. Enemata were retained. The catheter showed the bladder empty. During the preceding night the respiration had been very irregular, at times sighing in character. The eyes had turned sometimes to the right, sometimes to the left. Every half-hour there were short cessations of breathing, followed by spasmodic cough, with intermittent pulse, rising to 90, then falling to 48. Respiration 50.

Saturday (fifth day) the condition remained much the same; the patient gradually failing; the temperature rising in the afternoon to 105°, dropping back to 104°; the pulse rising to 130 and becoming very feeble.

Sunday (sixth day). Patient steadily sinking; temperature rising in the afternoon to 106.4°; hands purple. Patient died quietly at 3.50 P. M.

The autopsy was made the following morning by Medical Examiner Swan, Drs. Councilman, Homans, Hildreth, Durrell, Walton, F. W. Webber (of Newton), Pease, and G. W. Fitz (of Cambridge), being present. The result of the autopsy was as follows:

Body of a spare, muscular, well-built young man. Rigor mortis present. Lividity of dependent parts. No external marks of violence. Head opened. Subcutaneous tissue of scalp shows no evidence of injury.

Calvarium removed. Surface of brain covered with extravasated blood beneath dura, (most marked over occipital lobes,) of blackish color and tarry consistency; greatest quantity on the left side. On removing brain, middle fossa on left side found to contain several ounces of the same black, tarry blood, and base of brain covered with the same (filling the posterior fossa and extending into the vertebral canal). There was a small rent in the lateral sinus near outer margin of temporal bone. About this rent, for a short distance, the dura mater was dissected up. No fracture of upper part of skull or upper cervical vertebrae. Brain, on section, showed marked injection of blood-vessels and flattened convolutions; otherwise normal. No extravasated blood or fluid in ventricles.

Pleura everywhere smooth and glistening. *Lungs* large, soft. On section, upper part of lungs dry and crepitant. Much dark and frothy fluid flowed from middle and lower portion of lungs (œdema). *Pericardium* smooth and glistening. *Heart* normal size. Walls of right ventricle slightly thicker than normal. Valves smooth and soft. *Aorta* smooth, soft and elastic, and measures only six and one-half centimetres, just above the aortic valve. *Peritoneum* everywhere smooth and glistening. *Stomach* contains a little dark, slimy mucus. Small intestine contains small amount of yellowish, gruel-like material. *Large intestine* contains gas and lumps of small, yellow faeces. Mucous membrane throughout normal. *Liver, spleen and kidneys* engorged with blood, otherwise normal. *Pancreas* normal. *Bladder* contains a little turbid urine. Great vessels of trunk contain dark liquid and clotted blood.

Diagnosis, rupture of lateral sinus and resultant hæmorrhage, caused by blow on head.

REMARKS (DR. G. L. WALTON).

On account of the widespread interest in this unfortunate case, and in consideration of the general desire on the part of practitioners to know the exact facts, it was thought best to publish the account at once, without attempting a review of sparring accidents in general, the collection of the necessary data for which would require considerable time. A *résumé* of the important points at issue will not, however, be out of place.

On holding to the light the base of a skull, from which the calvarium has been removed, it will be seen that the roof of the glenoid fossa, which receives, on either side, the condyle of the jaw, is extremely thin. Cases are on record, and specimens preserved, in which blows upon the jaw have produced fracture at this point. The condyle has been found in one such case driven directly through the skull. Study of the parts would lead one to expect this accident with comparative frequency if the condyle were not so placed that the violence of such a blow is quite as apt to be distributed to the sides (more particularly to the posterior and inner walls) as to the roof of the glenoid fossa. In fact, the violence of most blows upon the jaw, upon the chin, for example, would naturally be so far distributed in other directions (upon the teeth, or through the superior maxillary bone) to say nothing of the mobility of the jaw itself, and its liability to fracture, that it must be only in a very exceptional case that the full force of impact is transmitted to the roof of the glenoid fossa.

Rarely as fracture occurs in this locality from this cause, it is probably even more unusual for a blow of

this nature to produce hæmorrhage without fracture. Assuming the vessel wall to be healthy (and the autopsy revealed nothing to the contrary) the most plausible explanation in this case seems to be that if the force of the blow was expended on the jaw it was directly transmitted to the posterior upper wall of the glenoid fossa (firm bone), thence through the zygoma and petrous portion of the temporal, expending itself, by a species of *contre coup*, upon the point of least resistance on the other side of the bone, namely, the thin wall of the adjacent sinus. This course would follow an uninterrupted path of solid bone; which broadens into the petrous portion of the temporal, and furnishes a buttress well fitted ordinarily to withstand blows from this direction. The term *contre coup* should not be here confounded with its ordinary surgical usage, for there was no indication that any hæmorrhage, contusion, laceration, or other lesion, was produced upon the opposite side of the cranium.

Possibly the compression of the jugular vein may have caused sudden tension in the sinuses, contributing to the result.

It will not be out of place briefly to discuss the localizing symptoms and the question of operation, vital considerations in this class of cases.

In the first place, regarding the nature of the lesion, all the general symptoms pointed to hæmorrhage. The fact that the patient was not momentarily stunned (as shown by his remarks on receiving the blow) ruled out concussion in the ordinary surgical acceptance of the term. The onset of reeling, falling, loss of consciousness, deepening stupor, stertorous respiration and full pulse, with alteration of pupils, pointed conclusively to the pouring out of blood; the severity and fulminating character of the symptoms indicating a hæmorrhage of rapid onset and considerable extent.

With regard to the seat of the clot, convulsive rigidity of arms and legs pointed to implication of the motor tracts of these members somewhere in their course, or to their cortical centres, the absence of facial involvement showing the escape of the facial centres and tracts. Hæmorrhage into the internal capsule could at once be ruled out by the bilateral nature of the symptoms from the first. The only accessible regions left to consider were the motor centres for the arms and legs on the cortex, the *crura cerebri*, and the pyramidal tracts at the base, especially in the medulla oblongata, where they come to the surface.

In the case of bilateral symptoms resulting from unilateral pressure on the cortex (for example, in cases of middle meningeal hæmorrhage, with transmitted pressure to the opposite side) the onset of symptoms is always unilateral. Supposing, again, so improbable a lesion as double middle meningeal hæmorrhage from a blow of this nature, the facial centres could hardly escape.

At the base, however, we find the fibres for both upper and lower extremities for the two sides running so closely together that involvement of all four limbs would be the natural consequence of hæmorrhage pressing upon this region. The facial nerves having left the motor tract above the pyramidal crossing, would explain the absence of facial spasm and paralysis, in case the bulk of pressure was brought to bear at this point. We have only to suppose that the facial nerve in its course, escaped sufficient pressure to cause paralysis, a not unreasonable theory, considering the comparative immunity of basal peripheral

nerves sometimes observed in cases of even extensive basal exudation. The ocular nerves were certainly almost free from implication in their course along the base. It is especially noteworthy that there should have been no paralysis of the abducens, for the long course of this nerve over bony irregularities renders it especially liable to pressure, so much so that internal strabismus sometimes results from pressure downwards of the brain itself, caused, for example, by a large tumor in its substance.

While it might be conceivable that convulsive symptoms from irritation of the cortex should result from pressure at the base, this seems a hardly probable supposition, and in any event the symptom-complex should have included facial spasm.

The most reasonable explanation of the rapid onset of convulsive rigidity of all extremities, with ankle-clonus, seemed, therefore, that irritation of the pyramidal tract in the medulla was quickly produced by the hæmorrhage, the succeeding paralysis with relaxation resulting from loss of conduction through these tracts on account of the extreme pressure of the clot.

Let us now consider the other symptoms in the order of their localizing value. The occasional slight difference between the pupils, in favor of the left, was due to paresis of the third nerve on that side, from pressure of the clot in the middle fossa extending to the sphenoidal fissure, as pointed out by Hutchinson,¹ in cases of middle meningeal hæmorrhage. The temporary weakness of the internal rectus, shown by the left eye not perfectly following when the eyes were deviated to the right, points to the same pressure on the left third nerve.

Conjugate deviation of the eyes, as well as bilateral dilatation and contraction of pupils, are common in various lesions, and furnished very little assistance as localizing factors in this case.

With regard to the conjugate deviation, the direction was generally to the left while convulsive symptoms were present, this condition alternating with deviation toward the right when paralytic symptoms ensued. This fact would tend to negative the view that the symptom was due to extension of the clot to the centre for conjugate deviation in the angular gyrus. In this event the extension would naturally be more marked on the left than on the right, and would seem rather to turn the eyes to the right than to the left, since deviation *away from* the lesion is the rule in case of cortical irritation, *towards* the lesion in that of cortical paralysis.

Irritation and paralysis of the sixth nucleus in the medulla oblongata cause, respectively, conjugate deviation toward and away from the lesion through fibres connecting the sixth nucleus of one side with the third of the other; this nucleus is, however, so far removed from the surface, that is, in the floor of the fourth ventricle (where no evidence of lesion existed) that the pressure of a clot at the base could hardly be expected to cause such irritation and pressure, at least, affecting the nucleus on either side alone. A centre for conjugate deviation also exists in the second frontal convolution, which may or may not have been directly or indirectly affected by the extension of the clot. In point of fact conjugate deviation is a symptom so readily provoked by lesions in various localities, as well as in cases without recognizable local lesion (as in simple epilepsy) that it is of compara-

tively little value as an absolute guide to localization, though sometimes valuable as a corroborative element in diagnosis.²

The comparative rapidity of the pulse in spite of the extreme degree of compression, while possibly merely an accompaniment of elevated temperature, may have denoted paresis of the pneumogastric.

Analogous cases can hardly be adduced to throw light on this one, for, as far as we know, we have to do with the first instance on record of this exact injury.

An unfortunate coincidence of hæmorrhage at the base and a blow received in sparring, occurred in 1884, at New Haven. The physicians differed as to the probability of fracture. It was said, however, by observers of the bout, that the young man commenced to fall before the blow (upon the forehead) was struck. Dr. Foster writes Dr. Hildreth regarding this case, that stupor and paralysis of all the extremities followed, and that death ensued six days later. No fracture was found, and Dr. Foster, who had disbelieved in fracture from the first, regarded the blow merely coincident, not causal, the apoplectic attack being precipitated, in his opinion, by excitement. This case comes, therefore, under a different category.

No report of autopsy after death from a blow upon the jaw has come as yet to our notice, though we are informed that this is not the first instance of such unfortunate result.

Cases of hæmorrhage following blows directly upon the head, without fracture or predisposing arterial disease, are already sufficiently rare to be worthy of publication, but that such a blow as here received should produce this result, would seem almost impossible were the fact not demonstrated by such a case as the one under consideration. The occurrence must be regarded, therefore, as a rare result of a chance blow, which could not have been foreseen and which may never occur again.

With regard to the question of operative interference: Had the symptoms pointed to middle meningeal hæmorrhage of the usual seat, whether upon the side upon which the blow was struck or upon the opposite side, the advisability of operation would have been at once established. The symptoms of this lesion are sufficiently well marked, and the successful issue of operation sufficiently well established, to place this contingency among the well-recognized indications for surgical interference. The same is true of hæmorrhage from the middle cerebral artery, the symptoms in this event being identical, the seat of the clot being practically the same, except that it is subdural instead of extradural. The chief localizing symptoms in both these lesions are spasmodic movements of the opposite side of the face, and of the opposite arm and leg, followed by hemiplegia, the symptoms later becoming bilateral. Such symptoms may be delayed, a period of perfect consciousness intervening after the stunning effects of the blow have passed away and before the deepening stupor of hæmorrhage ensues. In one such case under Dr. Homans's care, reported in the *Boston Medical and Surgical Journal* (February 12, 1891) spasm of the right angle of the mouth preceded by aphasia and followed by convulsions involving the right arm and leg, becoming rapidly general, appeared seven days after a fall upon the right side of the head.

¹ On Compression of the Brain, London Hospital Reports, 1867.

² See Vierordt (Diagnostik der Inneren Krankheiten, s. 541) on the Localising Value of Conjugate Deviation.

Hæmorrhage by *contre coup* was diagnosed, and the clot successfully removed at my suggestion by Dr. Homans, perfect recovery following. The hæmorrhage was subdural and involved the motor tract and temporal region, most copious over the facial area.

In the present case we had to do with a hæmorrhage in such location, and so quickly poured out, that by the time the symptoms were sufficiently marked to point with any definiteness to the seat of the lesion, the base of the skull had been flooded, and the vertebral canal so far invaded as to cause severe pressure upon the medulla oblongata. The only excuse for operation here would seem to be the otherwise hopeless condition of the patient. Upon this point the personal equation varies greatly, but the prevailing feeling among the consultants in this case was that while any hope of relief, however faint, would justify the attempt in so desperate a situation, there was really absolutely no prospect of relief by surgical interference. The patient was on the verge of death, which the shock of operation might only precipitate, and remove the remote (certainly extremely remote) possibility of absorption. Ligature of the carotid artery was hardly advisable. This procedure, aimed to control, for example, middle meningeal hæmorrhage, though proposed by Forneaux, Roser, Simons and others,² promises very little in these cases, as shown by Gallez³ in his recent contribution to the study of trephining, who points out that the hæmorrhage is not always controlled in this way, and that even if it be controlled, the consequences of the clot are not averted.

The question of trephining for hæmorrhage at the base, with or without fracture in this location, is one upon which study is not exhausted. Possibly future experience may lead to less conservatism in this class of cases, but we do not gain sufficient encouragement from the present status of cerebral surgery to afford hope that drainage of the base of the skull, difficult at the best (particularly on account of pressure downwards of the cranial contents) can be satisfactorily established in so desperate a case as this, in which the vertebral canal has been already invaded.

Gallez,³ in commenting upon this point, after speaking of the comparative hopelessness of operations for very extensive hæmorrhage, uses the following language: "It is even less justifiable to undertake operation when symptoms exist of compression of the bulb, and of the nerves at the base of the brain; dilatation and paresis of the pupils, or rapid pulse (caused by paralysis of the pneumogastric). The extravasation is too diffuse."

Jacobson and Agneau are quoted by this writer in substantiating this view, the former authority adding that the condition points to extensive fracture. This would certainly in a majority of cases be true, and was to have been expected in our case, but whether fracture were present or not, the contra-indications to operation for hæmorrhage of this extent and seat, would seem absolute.

The autopsy, in the opinion of all present, certainly justified the conclusions drawn, both regarding the localization and the question of operation, the vital points in the case. The existence or non-existence of fracture had comparatively little practical bearing, either on the diagnosis, prognosis or treatment.

MALIGNANT DISEASE OF THE RECTUM.¹

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

THE brief paper which I venture to present to you to-night is a sort of running commentary upon some of the salient points of this disease and upon some of the cases met with in my practice. As there is no known permanent, radical cure for these affections, our efforts are necessarily directed to the management of the cases with a view to prolonging life, and to making it as endurable as possible while it lasts.

The first point to receive consideration in all diseases of the rectum is the diagnosis. I should not feel called upon to advise and to urge upon the younger members of this Society the very great importance of a digital and visual examination, had I not seen and made some very embarrassing mistakes by neglecting this important essential. Every hospital or consulting surgeon has met with cases of malignant disease of the anus and rectum which have been treated as piles, simply because no proper examination had ever been made.

A noted musician, whom the older portion of this community remembers with pleasure, came into my office some years ago, saying that he had the piles, and had been treated for them off and on for two or three years. He wanted to know what was the matter with him. I was shocked at his appearance; emaciated, sallow, weak, a wreck of his former robust self. A digital examination revealed a large mass of malignant disease situated just above the internal sphincter, which any one could easily have found, and the character of which could not have been mistaken for anything else. It need not be said that I received much undeserved credit in the case by simply telling him his real condition.

As further showing the importance of making a careful examination in cases of suspected disease of the rectum, I may allude to the case of a woman who was brought to me by a reputable physician for an opinion as to the character of a rectal tumor which he had detected by a vaginal examination alone. Epsom salts and warm-water injections removed the lump in a few days.

Both of these mistakes could have been easily avoided by simply making a digital examination of the rectum. The diagnosis should never be made upon subjective symptoms alone. The external parts should be carefully inspected, and the finger should be carried as far up the rectum as possible. A lady was put under my care several years ago by Dr. Brainard, for the removal of a small patch of malignant disease situated nearly or quite five inches from the anus. It was reached with difficulty by the finger, and a careful, thorough search was necessary for its detection. Hæmorrhage was the principal symptom.

A woman about fifty-two years of age is under my care at the present time, who for several weeks had pelvic pain and colic, which were greatly aggravated by laxatives or cathartics. Constipation was obstinate. Repeated vaginal and rectal examinations revealed only a uterine fibroid on the posterior surface of the womb, which, it was thought, might be the cause of the pain and constipation through pressure. Etherization relaxed the parts, so that this explanation was at once

¹ Lancet, 1885; Medical Times, October 17, 1883, page 548.

² La Trepanation du Crâne, Paris, 1893.

³ Loc. cit., page 272.

¹ Read before the Boston Society for Medical Observation, January 1, 1894.

abandoned, and a fibrous stricture was detected, as far up the rectum as the fingers could be carried. It was annular, movable, firm, not hard nor nodular. Its character may be inferred from the fact, that the symptoms were promptly ameliorated by inunctions of oleate of mercury, and the administration of iodide of potash. These cases are sufficient to show the importance of a thorough digital examination.

The last case leads me to speak of the great value of an anæsthetic in all rectal affections located above the sphincters. Except in very thin people with lax tissues, it is not possible to make a thorough and satisfactory examination of the pelvic organs without an anæsthetic. This rule is emphatically true, as regards affections of the rectum. With the patient under ether in the lithotomy position, the sphincters are to be thoroughly stretched, and the rectum cleared by an enema if necessary. A digital examination can now be made to the best advantage to detect strictures, growths or ulcers. With a Sims's speculum and a horizontal light, a good view can be obtained of from four to six inches of the lower part of the rectum, which is the location of nine-tenths of its lesions.

Bougies, sounds and catheters are of little use in making a diagnosis of stricture of the rectum. They impinge upon the promontory of the sacrum, or get caught in a fold of the mucous membrane, thereby giving untrustworthy evidence as to the true condition of the part. The finger is the only reliable sound, and the diagnosis of those rather rare strictures located above its reach is to be made from the symptoms, such as colic, abdominal distention, etc.

The majority of abnormal growths found in the rectum of adults are either specific or malignant in character. Aside from these causes, strictures may be due to tuberculous or other inflammatory changes, or they may be traumatic in character. Neoplasms or strictures due to other causes than cancer or venereal disease, are not very common in our metropolitan hospitals. Dr. Kelsey, in the late edition of his admirable work upon diseases of the rectum, makes the statement that almost as many strictures of the rectum, not malignant, are non-venereal as are venereal. Considering the facts, that little dependence can generally be placed upon the therapeutic test of the nature of the affection; that the clinical appearances are not always sufficiently characteristic; and that histories of cases through ignorance, carelessness, or wilful deception, are proverbially unreliable, I am unable to understand this statement. Specific and venereal diseases permeate society to such an extent, and are met with in such unexpected places, that the older practitioners, who have seen a good deal of these affections, will hesitate to subscribe to the above statement.

I venture the assertion that strictures of the rectum in adults, non-malignant and non-venereal are not often met with in our large hospitals. It is by no means easy in every instance to decide at once as to which of the two most common classes the patient belongs, but the cases are rare which cannot fairly be ascribed to malignant or venereal causes.

A differential diagnosis is of much importance, as affecting the prognosis and treatment. Specific and other non-malignant strictures may, and not infrequently do, send their owners to the poorhouse; but it is only after many years of suffering that they find rest in the grave. On the other hand, malignant disease of the rectum usually runs its course in two to

three years, and terminates fatally in the vast majority of cases. The exceptions to this rule are so rare, that I have ascribed the recovery in two instances to a mistake in the diagnosis.

When a digital examination reveals a hard, nodular mass in the rectum, more or less immovable, involving the mucous, submucous and adjacent structures, and encroaching upon the lumen of the bowel, there can be little doubt as to the malignant character of the disease. It is safe to entertain the same opinion in cases of hard, ragged ulcerations with indurated edges, and deep attachments. Not infrequently a rather soft, friable upgrowth is met with, which bleeds easily, grows rapidly, and is liable to recurrence.

Malignant disease at the anus resembles epithelial growths in other regions of the body, presenting an ulcerated surface with or without an upgrowth, and having a hard indurated base. The surrounding skin usually presents a healthy appearance, rather than a sodden, fissured, or nodular surface, as is so frequently seen in cases of specific disease in this region.

A broad, general distinction between malignant and specific disease of the lower bowel is, that the latter involves the anus, while the former is located higher up, so that oftentimes an area of healthy mucous membrane separates the disease from the sphincters.

While the therapeutic test is usually disappointing and unreliable, yet occasionally it is very satisfactory. Four years ago I saw, with Dr. Joseph Stedman, a woman under forty years of age who had extensive disease of the rectum above the sphincters, which was hard, indurated, involving adjacent tissues, thereby leading me to express the opinion, that it was malignant in character. She was put upon the compound tincture of iodine, and given an unfavorable prognosis. She took the medicine faithfully for many months, and still continues its use at intervals. She is very well, and has evidently derived great benefit from the drug. In this case the diagnosis was wrong, but the treatment was right.

It goes without saying that the prognosis in malignant disease of the rectum, as in other parts of the body, is unfavorable. While there is no known cure for these affections, yet much can be done to prolong life in many cases, and nearly always to make it more endurable.

The treatment is palliative or radical. I think that the opinion is gaining ground in this country that the former is preferable in very many patients. The operation, or mode of treatment, which cures cancer, has not been discovered. Hence the object of our efforts in the management of the affections under consideration is to give the sufferers all the comfort possible. It does not always seem desirable to prolong life, and yet that is very properly one of the objects of the physician's work.

The treatment of this disease may be considered under three heads, namely: the alterative, the opium, and the operative methods. Whether one or all of these modes of treatment shall be pursued in any given case, depends upon circumstances.

A good illustration of the alterative method was seen in the case of a policeman about forty years of age, who had a malignant ulcerating mass three inches in diameter upon the anterior wall of the rectum above the sphincters. Its location precluded any radical operation, and the symptoms did not call for colotomy. He took from nine to twenty-seven drops of the com-

pound tincture of iodine daily for upwards of two years; once or twice a day he took an enema containing from one to two grains of cocaine. He was thus enabled to do his work as patrolman for the above period. The time finally came when his strength began to fail; and on the day that he was discharged from the force, he went into an adjoining room, and shot himself dead. He fully understood the hopeless nature of his disease; and the moment that he was disabled he took the management of the case into his own hands.

In view of the fact that this man was always better on resuming the treatment, his physicians could not but think, that it had a decided beneficial effect.

It is nearly three years since I removed a growth two inches in diameter from the rectum of a man forty-seven years of age, by Cripps's operation. It was pronounced malignant by competent authority. The symptoms were pain and hæmorrhage. He has taken the iodine daily since the operation, and there has been no return of either symptoms or growth. I dread, however, to see this man enter my office, as I do any other person, upon whom I have operated for cancer; for it is probably only a question of time when a recurrence will take place.

Six years ago I removed a similar growth from the rectum of a middle-aged lady, by Cripps's operation. For four years she took Chian turpentine, and drank Ypsilanti water constantly. There has been no recurrence of the hæmorrhage, or of the disease. I am inclined to ascribe the cure in this case to a mistake in the diagnosis, rather than to the treatment.

Many years ago Dr. Henry M. Field, of Newton, suggested to me the iodine method of treating malignant disease of the rectum. He thought that he had seen beneficial effects from its use; and so far as regards two cases, which I saw with him, I can confirm his opinion. For a long time I have given the drug to nearly all of my patients with malignant disease, wherever located, provided they could take it without disturbing the stomach. In many cases I could not see that any benefit was derived from its use. The rapid growing and markedly malignant ones, as might be supposed, derive less aid from it than others.

The natural course of malignant disease varies so much in different individuals, that it is extremely difficult to arrive at reliable conclusions as to the true value of any drug in checking or modifying the new growths. Chian turpentine, condurango and many other articles have had their day, and have been discarded because they did not stand the test of experience. I do not claim anything for iodine. I use it, because I think it is our duty to give these unfortunate people the benefit of every possible aid; and for this particular purpose, I know of nothing better at present than the compound tincture of iodine.

Sooner or later most patients afflicted with malignant disease of the rectum are compelled to resort to opium to relieve their sufferings. The pain is usually due to obstructed peristalsis, colic as we call it, or to the pressure or other influence of the growth itself upon the nerves. The first is paroxysmal, and is coincident with the vermicular action of the bowels. The latter is a steady, grinding, boring, or aching pain, very wearing to the nervous system, and very distressing to bear. Both can be controlled to a certain extent with opium. Both are relieved temporarily by excision of the growth. Colotomy usually relieves the colic permanently, but may do the pressure-pain little, if any good.

A fair example of the opium treatment was recently under my care through the courtesy of Dr. Whittier. A man, sixty-eight years old, had suffered about two years with a cancer of the rectum. It was located well above the sphincters, hard, nodular, and involving the neighboring parts to a wide extent. Colic and pressure-pains were severe. The liver was greatly enlarged by a secondary growth extending nearly to the umbilicus. Several surgeons were consulted at different times, and all very properly advised colotomy. The patient finally became so weak and exhausted from the progress of the disease, aggravated by the great difficulty experienced every week in his efforts to empty the bowels, that he realized the fact that something must be done. The opium and operative treatments were fully explained to him and he decided to try the former. At first a quarter of a grain of morphine given twice daily under the skin was sufficient to relieve most of the pain. This quantity was gradually increased until he took between three and four grains daily, with the effect of keeping him fairly comfortable. The bowels did not move for nine weeks after he began the morphine. His diet consisted of gruels, soups, and beef extracts. No clear or unmodified milk was given during this period. After some weeks of this complete obstruction, the fæces could be easily felt in the left iliac region. The abdomen never became distended to any extent, although very little flatus escaped for several weeks. The paresis of the intestines produced by the morphia was surprising. There was no vomiting, hiccup, delirium, nor headache. Thirst was urgent, and the mouth and throat were very dry and parched, in spite of all our efforts to prevent it. The emaciation became extreme. The bowels finally began to move of themselves, without aid of any sort; and during the last weeks of his life he had from two to six stools daily, thereby completely removing the collection above the stricture. There was no hæmorrhage. He died from exhaustion. A seasonable colotomy would doubtless have enabled this man to keep about longer, and to have postponed the opium stage for a time. Whether his life would have been prolonged thereby, is a question not so easily decided.

Under the head of operative treatment there are three measures, which require consideration, namely, Cripps's and Kraske's operations and their modifications, and colotomy. The first is particularly adapted for cases in which the disease is limited to the first five inches of the bowel. It consists briefly in dividing both sphincters and rectum as high as the tip of the coccyx, and then dissecting out the growth or diseased tissues.

Judging from a limited experience, this is a very satisfactory operation. The dangers are shock and hæmorrhage. I have never seen incontinence of gas or fæces to a troublesome degree follow this operation. It is especially indicated for the removal of growths which are limited in extent, movable, and not located over the urethra and prostate.

Kraske's operation is designed for the removal of growths located higher up than five inches, or above the reach of the finger. The sphincters are not divided. The bowel is reached through an incision over the sacrum and coccyx. The latter bone and a portion of the former is removed. The gut is divided above and below the diseased portion; the latter is removed; and the ends of the healthy bowel are joined with sutures or fastened in the wound, as the condition requires.

The peritoneal cavity is usually opened in this operation, thereby adding another element of danger from extravasation of feces.

Finally, we come to the most satisfactory operation for the relief of the majority of cases, colotomy. This is now most frequently done in the left inguinal region, for the reason that the operation is more quickly and easily performed, the wound can be attended to far better by the patient, and the danger is no greater than in the loin. The relief to the obstructive pain or colic is usually complete and permanent. The pressure-pain may still require opiates or other treatment. Many lives are prolonged; and, more than that, they are made comparatively comfortable by this operation. In most cases the patient can keep himself clean and free from odor. A woman upon whom Dr. Bradford performed right lumbar colotomy worked for many months alongside another woman, without the latter ever suspecting that anything was the matter with her companion.

Kelsey's description of the operation is the best one I have seen. The incision parallel with Poupart's ligament is made about an inch from the left anterior superior spine. The peritoneal cavity is opened, and the colon brought out of the wound. The "bar" is made by joining the edges of the incision with a silver wire passed underneath the bowel. The intestine is then joined to the edges of the wound with sutures, and two or three days allowed to elapse before the bowel is opened. The operation is neither difficult nor dangerous, and in very many cases it is a most satisfactory one to both patient and surgeon.

By way of recapitulation it may be said, that the treatment of malignant disease of the rectum is essentially palliative. Colotomy is indicated to relieve obstructive colic, and it should be done early in order to save the patient's strength. The radical operations are indicated in the early stage, when the growth is limited in extent, free from deep adhesions and infiltration, and not infringing upon the urethra or prostate. Opium, the king of drugs, is to be avoided as long as possible, and given judiciously, in order that its beneficial effects may not be lost by over-doses before the time comes when it is needed the most. While the disease is incurable, very much can be done by judicious management to make the patient's life endurable and his death peaceful and easy.

A CASE OF PULMONARY STENOSIS IN AN ADULT.

BY OLIVER H. EVERETT, M.D., WORCESTER, MASS.

THE following case is interesting in that the diagnosis was made incidentally, and not because the patient complained of any symptoms pointing to her heart. Furthermore, the rarity of the lesion in an adult makes it worthy of record, as well as the fact that the patient has attained her present age with so few symptoms. Professor Loomis, in reporting a similar case,¹ speaks of it as one of the "curiosities of medicine."

Mrs. X., twenty-seven years old, a native of the State of New York, of French-Canadian parentage, applied for admission to the Memorial Hospital, November 10, 1893, thinking she had typhoid fever, as

she had been taking care of a patient with that disease. She had a slightly elevated temperature, and was admitted for observation. She says she has always been fairly well, though never strong and cannot do hard work without getting tired and out of breath. Even as a girl she could not join in active plays. There is no history of rheumatism, chorea or other disease except scarlet fever and *la grippe*. When she was ten or twelve years old her dyspnea became more marked; and in the course of the next few years she was examined by several physicians, who said she had heart disease. There has been nothing abnormal about menstruation since that function was established at the age of fourteen. Since that time she has never but once consulted a physician for her heart. She was married ten years ago, and has had four children. She has always suffered from cold hands and feet, and occasionally has had slight swelling of the ankles. She does her own house-work, with some help about washing and ironing.

She is a fairly strong-looking woman, of medium height, face slightly flushed, but not cyanotic or livid. Finger- and toe-nails somewhat rounded, and blue (instead of the normal color) under them. On examination of the chest the most striking point is a long inspiration, like a sigh, occurring from three to six times a minute. She says she always breathes in this way, feeling as if she should smother otherwise. The night-nurse reports that there is no irregularity in her breathing when asleep. The apex beat of the heart is faint and diffused, and can be only definitely localized when she is sitting up. It is then found in the mammary line below the seventh rib. No thrill is perceptible over the heart, nor any impulse to be felt below the ensiform cartilage. The heart's dulness begins at the upper border of the fourth rib, thence to the apex beat, and thence to the middle of the sternum. Over most of the cardiac area the heart-sounds are normal, though rather faint, and there is no murmur over the aortic valves. To the left of the sternum, however, in the first, second and third intercostal spaces, is a soft, blowing, systolic murmur. Its point of greatest intensity is in the second intercostal space, close to the sternum, whence it may be traced upwards, and to the left, in a line pointing directly to the middle of the clavicle. Downwards it cannot be heard further than the third intercostal space. The murmur does not disappear on full inspiration. The pulmonic second sound is fainter than normal, and there is no thrill or impulse to be felt over this artery. Percussion and auscultation reveal nothing abnormal in the lungs. Dulness is normal over the liver and spleen. There is no ascites, and no oedema of any part of the body. Superficial veins of legs and upper part of the chest are well marked. There is no pulsation in the jugular veins, nor are they particularly prominent. The radial pulse is small and weak, has ranged between 70 and 90, and is alike on both sides. Examination of the urine shows it to be acid, specific gravity 1.015, and containing neither albumen nor sugar. Since being in the hospital she has once spit up a little blood, or bloody mucus, which I did not see, and have no reason to suppose came from the lungs; but the fact is interesting in view of the frequent termination of such cases in phthisis, with hæmoptysis often an early symptom. Her temperature became normal the next day after her entrance, and she has shown no symptoms of typhoid fever.

¹ International Clinics, 1893, second series, vol. iv, p. 13.

Having now a case of murmur over the seat of the pulmonic valves, the first question is as to its origin. Balfour² says, "The pulmonary area has been not inaptly termed 'the region of romance,'" referring to various interpretations which have been given to murmurs in this location. This is one of the less common situations of cardiac murmurs, which, when present are usually inorganic. Flint³ says an inorganic pulmonic direct murmur is not infrequent, though it seems to be far less common than an aortic inorganic murmur. That the murmur in this case is pulmonic and of organic origin I feel very sure. It is not heard at all to the right of the median line of the chest, nor is it transmitted into the carotids as Flint⁴ says is always the case with an aortic murmur. Neither can it be heard at all towards the heart's apex, nor in the back, as a mitral murmur would be; but can be traced from its point of greatest intensity, upwards and outwards, towards the middle of the left clavicle. All these points show its pulmonic origin. Murmurs in this situation have been ascribed by some authors to mitral regurgitant lesions, heard here instead of at the apex as usual. In accordance with this theory, which has been advocated by Balfour, the murmur comes from the dilated appendix of the left auricle coming close to the chest wall. Such a murmur is differentiated from one arising in the pulmonary artery by its point of greatest intensity being a little further to the left, in such a position that when the stethoscope is placed over it there is at least the width of the tip of the middle finger between the instrument and the left border of the sternum. With a pulmonic murmur the stethoscope, when over the point of greatest intensity, touches, or even overlaps, the sternal border. Authorities differ as to such a murmur being ascribed to mitral insufficiency. Flint dismisses it very summarily, saying the question is hardly worth the discussion which has been given to it. However that may be, there is in the case reported an entire absence of any symptoms pointing to mitral disease, and the murmur is best heard when the stethoscope is close to the sternum.

Now, most pulmonic murmurs are inorganic. Is that the case in our patient? I think not. The color of her skin and mucous membranes is good, and shows no sign of anæmia; there is no venous hum in the vessels of the neck; and the pulmonic second sound is fainter than normal, instead of being accentuated. The heart's dulness on percussion is somewhat increased; and there are positive signs of engorgement of the systemic veins, in the blue finger- and toe-nails, and the venous enlargement in the legs and chest. In addition to these points in the differential diagnosis, Bramwell⁵ mentions the difference in the character of the pulse. In early anæmia it is of good tension, but irritable and variable in rate, while in pulmonic stenosis the pulse is small and weak, and may be intermittent. Furthermore, this patient has had rest, tonics and good food; yet while she feels better than on entrance to the hospital three weeks ago, her murmur is just as clearly marked as at first.

Dr. Nelson, at the Memorial Hospital, has very kindly examined this patient's blood, according to Ehrlich's method, as described by Dr. W. S. Thayer in the *Boston Medical and Surgical Journal* for Feb-

ruary 16 and 28, 1893, and finds no indication of anæmia. Dr. Nelson's report is as follows:

"Red corpuscles normal in size, form and color. Red and white corpuscles in normal proportion. Different varieties of leucocytes are in about normal proportion; neutrophils 75 per cent., eosinophils four per cent., small mononuclears 18 per cent., large mononuclears and transitional forms three per cent."

For these reasons an inorganic, anæmic origin of the murmur may be excluded.

Before considering stenosis of the pulmonary artery as the cause of the murmur, there are some other conditions, which may give rise to it, to be taken into account. When the left lung is retracted, as by adhesions from an old pleurisy or by long standing disease, the pulmonary artery may be in contact with the inner surface of the anterior chest wall, making its pulsation visible and palpable, and producing a systolic murmur. There is no history of any such disease of the lung in this case, nor any physical sign of such a condition now existing. Balfour says that under these circumstances the murmur is produced by compression of the artery between the parietes and the heart in systole; and he describes such a case.⁶ A murmur depending on retraction of the lung disappears on a full inspiration, which is not the case with this patient. Bramwell⁷ speaks of cases where a pulmonic murmur was produced, which he ascribes to a deposit of lymph outside the pericardium, the result of an antecedent pleurisy. Pressure upon the artery by a tumor in the mediastinum, or by enlarged bronchial glands, may cause enough narrowing of its calibre to give rise to a murmur. In an article by R. Douglas Powell, in Reynolds's "System of Medicine,"⁸ a case is given where an aneurism of the aorta pressed upon the pulmonary artery, causing signs of pulmonary stenosis, as well as those of a thoracic aneurism. Displacement of the heart by fluid may also cause a pulmonic murmur. Hayden⁹ refers to cases reported by Da Costa, of pulmonic systolic murmur believed to be caused by the pressure of solidified lung on the left branch of the pulmonary artery. He also speaks of a case where such a murmur developed shortly before death, probably caused by thrombosis. None of the above conditions seem to exist in the case of Mrs. X. Her embarrassment of respiration dates back too many years, and has no history of any antecedent lung disease. One other cause of such a murmur needs only to be mentioned. In children, and in adults with thin, yielding chest walls, it may be produced by pressure with the stethoscope.

If then, this murmur is not inorganic, nor caused by pressure, or other causes outside of the artery itself, it must be caused by some obstruction within the vessel. This may be either a narrowing at the pulmonic orifice, some valvular lesion, or a diminution in calibre of the artery. Occasionally the stenosis takes place in the conus arteriosus, or infundibulum, of the right ventricle. Exactly what the condition is in a given case cannot be positively known. The general name of pulmonary stenosis embraces them all.

Such a lesion may be either congenital or acquired, with the probabilities very greatly in favor of the former. Rosenstein¹⁰ says that there are only a very

² Clinical Lectures on Diseases of the Heart and Aorta, London, 1876, p. 194.

³ Manual of Auscultation, etc., Philadelphia, 1890, p. 251.

⁴ Loc. cit., p. 224.

⁵ Diseases of the Heart and Thoracic Aorta, New York, 1884, p. 553.

⁶ Medical Times and Gazette, London, December 12, 1874, p. 655.

⁷ Loc. cit., p. 551.

⁸ American Edition, Philadelphia, 1890, vol. II, p. 899.

⁹ Diseases of the Heart and Aorta, Dublin and London, 1875, p. 1003.

¹⁰ Ziemssen's Cyclopædia, vol. VI, p. 155.

few scattered cases (he mentions four) of the acquired form, and on this point all authorities agree. In the *British Medical Journal* of a later date¹¹ is reported a case supposed to be acquired, and not congenital, and the specimen is described. It is usually the result of intra-uterine disease (endocarditis) or of arrested foetal development. A diagnosis between the acquired and congenital varieties in an adult cannot often be made with certainty. Keating and Edwards¹² say there is "no sign or sequence of signs by which a congenital murmur can be definitely differentiated from an acquired lesion." Bramwell¹³ says the history of the case is the only means of differential diagnosis, and we may be helped by the fact that several members of a family may have congenital heart disease. He also says it is "only when symptoms and signs of cardiac disease have been entirely absent in early life that the diagnosis of the acquired form can be made." On the other hand, even the history of cyanosis and dyspnoea from early childhood is not conclusive proof of congenital disease, as such a history may be found in other cases.

So that unless the case has been seen, both before and after the establishment of the murmur, the differential diagnosis seems to be purely a matter of probabilities. Assuming then, as there is no evidence to the contrary, that we have a case of congenital pulmonary stenosis, let us see what is the usual course of such a lesion, and then compare this with the history of the present case.

Of all forms of congenital heart disease, pulmonary stenosis is the most common. This stenosis may be at the infundibulum of the ventricle, at the pulmonary orifice, or a general narrowing of the artery and accompanied by different conditions of the various foetal openings, in the heart and great vessels. The most common form is stenosis of the artery itself, as far as its bifurcation. With this condition is usually found either an open foramen ovale, or a deficiency in the ventricular septum. The ductus arteriosus may be either open or closed, more often the latter. The interventricular septum is normally closed at the third month of foetal life. If the pulmonic obstruction occurs before this time the blood finds its way through this opening, preventing its closure. Obstruction occurring after the third month finds some relief by the flow of blood directly from auricle to auricle through the foramen ovale. After birth, in either case, some blood goes to the lungs through the ductus arteriosus, if this remains open. If this is closed there is a certain amount of collateral circulation established by means of the bronchial, oesophageal, or other branches of the aorta. Compensation for the stenosis is not perfect by any of these means, so that there is usually hypertrophy of the right side of the heart, with more or less dilatation, and also cyanosis and enlargement of superficial veins, in greater or less degree. The more complete the compensation, the less marked are the symptoms, or as Keating says, compensation is the "key-note in prognosis" in these cases.

Bramwell divides cases of stenosis into three groups, according to the severity of the symptoms.

(1) Where the lesions are severe, and the patients die at once or soon after birth. If they live for any length of time there is great cyanosis, a subnormal

temperature, somnolence, dyspnoea, dropsy, and often fatal convulsions.

(2) The lesions are less severe, and they may live several years, but with heart symptoms from the first. Cyanosis may be only noticeable on coughing or exertion, and is more marked on the periphery of the body. Fingers are clubbed, and superficial veins prominent. When compensation becomes imperfect, or is interfered with by intercurrent bronchitis or other trouble in the lungs, to which these patients are very liable, dyspnoea and palpitation increase. Oedema is usually a late symptom, at which period there may be convulsions. At the same time albuminuria and enlargement of the liver and spleen may be found. If the patients survive puberty, they generally die young from phthisis. Hæmoptysis is frequent, being often the earliest symptom of lung invasion.

(3) The lesions are slight, and symptoms may not arise till years after birth. They are caused by failure of compensation, which is either gradual, or brought about more rapidly by intercurrent disease. At about the time of puberty, compensation is very apt to be disturbed. The cases then run the same course as if the symptoms had been present from early life.

Children with this defect usually develop slowly, both mentally and physically. Menstruation is apt to be late in its establishment. The hypertrophied heart presses upon the yielding ribs and cartilages, causing a bulging of that part of the chest wall. A majority of the cases die before adult life is reached. The elements which favor survival are a slight or moderate degree of stenosis, a sufficient opening through some of the foetal passages, and a good collateral circulation. Lebert¹⁴ quotes a table from Kussmaul showing that out of 64 cases, 41 died under ten years of age, 14 between ten and twenty years, and only 9 lived beyond twenty years. One case of undoubtedly congenital stenosis lived to the age of sixty-five, and two cases of complete closure of the artery died respectively at twenty-one and thirty-seven years (Lebert). Another, with stenosis and open foramen ovale, died at fifty-seven, from cerebral apoplexy (Keating and Edwards, p. 38). These cases are, of course, exceptional. As a rule, even for favorable cases, middle age will not be passed, and there is a remarkable tendency for them to terminate in pulmonary tuberculosis, a combination which is rare in any other form of heart disease. This is a curious fact to which Lebert (in "Ziemssen's Cyclopædia") devotes considerable space. He finds that the cases so terminating show no hereditary tendency, and he can only ascribe this frequency of tuberculosis to a deficient blood-supply in the lungs, and the pressure upon them of an hypertrophied heart. The left lung is usually first attacked.

As no dyspnoea was noticed in the patient till she was ten or twelve years old, while it usually appears early, the following table (Keating and Edwards, p. 41) may be interesting. In 41 cases of congenital defect, cyanosis first appeared at the age of

2 weeks	in 3 cases
3 weeks	in 1 case
1 month	in 2 cases
1 to 2 months	in 7 cases
2 to 6 months	in 5 cases
6 to 12 months	in 5 cases
1 to 2 years	in 3 cases
2 to 5 years	in 6 cases
5 to 10 years	in 1 case
10 to 20 years	in 6 cases
20 to 40 years	in 1 case
Over 40 years	in 1 case

¹⁴ Ziemssen's Cyclopædia, vol. vi, p. 321.

¹¹ December 17, 1891, p. 923.

¹² Diseases of the Heart and Circulation in Infancy and Adolescence, Philadelphia, 1886, p. 35.

¹³ Loc. cit., p. 335.

In only nine did cyanosis first appear after the age of five years.

The case reported seems to be one of a mild degree of stenosis, and she has been able to live in great comparative comfort. She has been singularly free from any diseases tending to disturb the compensation effected by her moderately hypertrophied heart. There is evidence of some disturbance of compensation at about the time of puberty. She says she has had *la grippe* twice; but, if so, her account shows that neither attack could have been very severe. Cyanosis only shows itself in the extremities, and there has been no oedema except occasionally at the ankles. She has the cold hands and feet mentioned by the authorities. The physical signs about the heart and lungs support the diagnosis, though the cyanosis and dyspnoea, even on exertion, are of a milder degree than usual. Sansom,¹⁵ however, reports the autopsy of a child where pulmonary stenosis was found, though there had been absolutely no cyanosis, but rather pallor. The indications of hypertrophy of the right heart are less marked than usual, and there is not the epigastric impulse usually felt; yet this symptom was entirely absent in a case of congenital stenosis¹⁶ where great hypertrophy of the right ventricle was found, and where the symptoms came on suddenly at the age of eighteen. Her lesion is not severe enough to have interfered with her growth and development. As long as no extra strain is brought on her heart she is likely to go on as she is for some time. She has lived unusually long without the appearance of tuberculosis, which may be expected to develop later. It would not be surprising to see it show itself by hæmoptysis at any time, though at present her lungs seem to be in a normal condition.

The cause of cyanosis is an interesting question in this connection, which has been argued by several writers. Two theories have been advanced. According to one the coloration is due simply to venous stasis, the blood backing up in the right side of the heart, and then in the systemic veins. The other theory ascribes cyanosis to the fact that there is a mixture of unoxygenated blood circulating with the arterial blood, the two being allowed to mingle by the persistence of one or more of the foetal openings which should have closed under normal conditions. Some think the color of the surface is due to the operation of both of these causes combined. In an article on cyanosis in the *Practitioner* for 1888, the writer takes the ground that less than a normal amount of blood goes to the lungs in these cases. The lungs then become partially collapsed, respiration is impeded, and what blood does go to the lungs is not properly aerated. This he regards as one of the most important elements in producing cyanosis.

THE RADICAL CURE OF HYDROCELE.¹

BY M. F. GAVIN, M.D.

THE different methods used for the radical cure of hydrocele are antiseptic incision, excision of a part or the whole of the sac, and injection: all other methods are now obsolete. It is with the last-mentioned method my paper will mainly deal. The open inci-

¹ Read before the Boston Society for Medical Observation, January 1, 1894.

¹⁵ Lectures on the Physical Diagnosis of Diseases of the Heart, Philadelphia, 1876, p. 130.

¹⁶ Lancet, August 2, 1884, p. 183.

sion, with or without excision of the sac, means the administration of an anæsthetic, detention in bed for a varying period from one week to four, while to undergo an operation has considerable effect on the minds of most of our patients.

There are cases where the open incision is the only operation to be considered: where there is a question of diagnosis; where a hernia exists; where injection has failed—congenital hydrocele; where the sac is much thickened. In all of these some form of open operation is called for.

There is a large class that can be successfully treated by injection. Perhaps it is well to inquire why injection has so often failed to cure the disease.

Let us hear the explanation as given by Jacobson, for the many failures: (1) The use of too weak a solution; (2) not bringing the solution in contact with the whole of the sac; (3) not withdrawing all the hydrocele fluid; (4) injecting large hydroceles immediately after they are emptied; (5) making use of injections in unsuitable cases.

No simple, uncomplicated case of hydrocele ought to be treated other than by injection. The use of tincture of iodine, the simple as well as the compound, is too often followed by failure to urge its use, which is often attended by a scene—patients often fainting, and suffering from griping pains, retraction of the testicle, nausea and even vomiting; unpleasant things to have happen in one's office. Since about six years I have treated all suitable cases of hydrocele by injecting half an ounce of a solution composed of equal parts of carbolic acid, alcohol and glycerine—a small bulb syringe answers very well. A little care is necessary in the use of the solution. Protect the skin surrounding the canula with a little gauze or absorbent cotton, so as to avoid the burning sensation so easily produced on the tender skin covering the scrotum; allow the fluid to remain. The injection is practically painless, and no unpleasant effects follow its use. Patients are allowed to attend to their ordinary business; and in from two to four weeks the acute hydrocele disappears.

I have no record of the number of the cases so treated; but since I have used it, I have seen only one relapse. The method has proved so effective, and with none of the drawbacks of other methods, that I feel warranted in bringing it before the Society. I have never dared to use carbolic acid as recommended by Dr. Levis. I am unable to give the name of the originator.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY EDWARD REYNOLDS, M.D.

SINGLE LIGATURE OF THE CORD.

NGUYEN KHAC CAN¹ bases his opinion of the superiority of a single ligature upon his observation that out of 68 cases of labor with double ligature of the cord, there were four cases of retention of the placenta; and out of 146 cases with single ligature, only two cases of retention. The duration of the third stage with the double ligature averaged 64 minutes, while with the single it was but 27 minutes.

¹ Algeria. Arch. de Toe. et de Gyn.

The author believes that a rapid diminution in the size of the placenta, due to the free escape of the intra-placental blood, favors retro-placental hæmorrhage, and consequent complete separation of the placenta, and that it further lessens the obstacle to its escape from the uterus and vagina by the resulting decrease in size. He recommends that double ligature of the cord should be reserved for cases of twin pregnancy. While we think that there is a question as to the correctness of the author's reasoning on the first point, there can be no doubt as to the advantage of diminishing the size of any body which is to pass the os uteri, and we think that we have ourselves noticed a greater ease of delivery of the placenta in cases in which but one ligature had been applied.

The suggestion of Nguyen Khac Can is certainly of value. It should be easy to prevent untidiness by catching all the intra-placental blood in a suitable basin, but the determination not to check intra-placental hæmorrhage, of course, implies a careful palpation of the uterus before the cord is cut, and an absolutely positive elimination of the possibility of a twin pregnancy.

CHOLERA IN PREGNANCY AND LACTATION.

L. Gaillard² reports seven cases of cholera during pregnancy. Five terminated fatally, two were lightly attacked and recovered. The synopsis of the fatal cases is as follows:

(1) Seven months pregnant; premature labor on second day; intravenous transfusion. Patient died on the sixth day.

(2) Eight months pregnant. Labor did not appear. Death of the fœtus on the sixth day, and of the mother on the eighth day.

(3) Six months pregnant. Intravenous transfusion on the fourth day. No labor. Death of fœtus on the seventh day; of the mother on the tenth day.

(4) Patient tuberculous, and six months pregnant. Death of the fœtus on the ninth day; of the mother on the fourteenth. No labor.

(5) Eight months pregnant. Fœtus dead when first seen. Spontaneous labor on the eleventh day. Intravenous transfusion just before death.

Gaillard thinks that four of these cases would have recovered, if they had not been pregnant. His experience supports the classic belief that pregnant women support cholera badly; that the disease is almost invariably fatal to the fœtus; that it is almost always accompanied by abortion, miscarriage, or premature labor; that such an occurrence increases the danger to the mother; and that this risk increases in proportion to the previous duration of labor. Gaillard has seen nearly 400 cases of cholera, and considers pregnancy by far the most serious complication of the disease, worse even than senility and phthisis.

When nursing women are attacked by cholera the mammary glands frequently become congested and painful. In spite of the depleting effect of choleraic diarrhœa upon all the other fluids of the body, the secretion of milk persists in normal quantity. Lactation does not seem to be a serious complication, so far as can be judged from the author's experience, six out of ten patients having recovered.

SYMPHYSEOTOMY.

The proper limitation of the field for this operation,

² Arch. de Toc. et de Gyn.

the determination of its value and of its risks, have occupied a prominent place in the obstetrical work of the past six months; as is evidenced by the publication of 64 papers upon the subject during this time and of about half that number of cases.

Byron Stanton² gives a good abstract of the latest opinions of the best authorities upon the amount by which the pelvic space is increased.

Experiments upon puerperal cadavera have shown that the gain in the pelvic diameters is in direct proportion to the amount of separation; that, in high degrees of contraction, the proportional gain is greater than in normal pelves and in the lower degrees of deformity; that this gain is not limited to the conjugata vera, but is also present, and to a greater degree, in the transverse and oblique diameters, at both the inlet and outlet; that the increase of these latter diameters varies between three-fourths and one-third of the length of the inter-pubic separation, while the increase in the conjugata is about one-fourth of this space. Morisani quotes experiments showing that for each centimetre of pubic separation, the lines between the promontory and the extremities of the separated pubic bones are increased two and one-half millimetres, that is, that two inches of separation of the symphysis would yield a gain of half an inch in the conjugata; while with three inches of separation, the gain is three-fourths of an inch; and to this amount is added a possible still further gain by the projection of one parietal protuberance into the distensible space between the separated pubic bones. Cases have been reported in which more than three inches of separation has been possible without injury (Novi, of Naples, $3\frac{1}{2}$ inches; Caruso, $3\frac{1}{2}$ inches); but, as a rule, three inches is the extreme degree of separation which is safe. We must not, therefore, count upon a gain of more than three-quarters of an inch in the conjugata, an inch in the oblique, and an inch and a half in the transverse diameters.

Limitations of the Operation.—The size of pelvis in which symphyseotomy is appropriate has been placed as low as $2\frac{1}{2}$ inches, and as high as a normal pelvis with an unusually large head, but these limits are probably far too wide. At the lower limit given the operation would probably result in the loss of the child unless the latter was extremely small. The application of this operation to normal pelves can hardly be too severely criticised. It is probable that there is not one case in 10,000 in which, in competent hands, the loss of the child during its extraction through a normal pelvis can fairly be laid to pure disproportion between the head and pelvis, and the success of symphysiotomy has been so marked that there is grave danger that it may be used in cases that could be treated equally well by the ordinary obstetric operations.

Technique.—The most scrupulous asepsis is necessary. The first step in the operation is freeing the surface of the mons veneri and labia majora of hair, rendering the skin thoroughly aseptic by the usual methods of preparing the abdominal walls for cœliotomy, and disinfecting the vulva and vagina. The patient may be placed at the side of the bed with knees drawn up and separated, or the operator may take his place between the extremities of the patient.

The technique of the operation has been improved by the more complete separation of the operation wound from the vulva by making the division of the symphysis subcutaneous. The incision should lie in

² Am. Jour. Obst., September 1896.

the median line, should be long enough to admit two fingers, and should terminate at its lower extremity just above the symphysis. This incision not only renders asepsis more easy of attainment, but places the wound in a situation where the bandage which fixes the pelvis during the after-treatment does not press upon the wound. The incision should be carried through the skin and subcutaneous fascia, and should lay bare the insertions of the recti on the pubes. These should be separated from the pubic bones by a transverse subcutaneous incision to an extent sufficient to admit two fingers, and care should be taken that the prevesical space is not opened in separating these insertions from the bone; as the posterior layers of the fascia of the abdominal wall may with care be separated from the symphysis by blunt dissection with the finger without this accident. A catheter should be passed into the urethra, and the soft tissues behind the symphysis widely separated from the bone by the finger. It should then be placed behind the symphysis with its tip upon the subpubic ligament; Galbiati's knife, Harris's modification of the same instrument, or in case of emergency any strong blunt-pointed bistoury, should be passed behind the symphysis with the finger as a guide, and should divide the joint and subpubic ligament from behind forwards, and from below upwards. The operator should then open the symphysis by abduction of the patient's knees, and should continue the separation till he judges that a sufficient amount of space has been gained, or till he feels the check due to the sacro-iliac ligament. The wound should then be covered with a protective dressing and a firm bandage placed around the pelvis below the crests of the ilia in such a manner as to prevent any further separation during the extraction of the child. After the delivery of the child the bladder should be injected with warm milk or some bland, colored fluid in order to determine the existence of any injury which may have been inflicted upon this organ during the extraction. Should such be found, it should be repaired at once. If no injury is detected, a strip of gauze should be placed in the wound, the remainder of the skin wound should be sutured; a dressing should be applied; and the divided surface of the symphysis should be held in place by a firm bandage round the pelvis below the crests of the ilia.

Mortality.—The latest general statistics noted gave a death-rate of about six per cent. from all causes; but it must be added that in many of the cases the patients were already in bad condition, and that the fatal result could be attributed to the operation itself in only one case (to be referred to later). These statistics are incomplete, contain the early cases, and are probably less favorable than could be now reported, unless an allowance must now be made for the fact that fatal cases are often unreported. Dr. R. P. Harris, in a recent personal letter, says that there have been 35 American cases, with four deaths. Of these, one was due to post-partum hæmorrhage, *unconnected with the operation*; one was due to shock in a much exhausted patient, *more the result of neglected labor than of the operation*; one was due to uterine sepsis, the operative wound remaining clean, *probably unconnected with the operation*; and one was due to sepsis in the symphysectomy wound, *directly a result of the operation*. Among the successful cases there had been no permanent unfavorable after-results. The operation must then be still considered a major procedure with a considerable mortality; but it is only fair to add that

among the cases which were operated upon early, there has so far been no death-rate peculiar to the operation, other than that from sepsis, which should, of course, be preventable.

ECLAMPSIA.

Alphonse Hergott⁴ has conducted a further series of experiments with the blood and urine of women suffering from eclampsia. His investigations lead him to believe that the convulsions of parturient women may be produced by either of two different causes. The first class he considers due to lesions of the kidneys; and the renal lesion may, he thinks, be produced by pregnancy. The second variety of eclampsia he considers due to the activity of a special pathogenic microbe which finds a suitable field for its development only when the organism has been modified by pregnancy. The first is an auto-intoxication, the second a bacterio-intoxication. He thinks it likely, though not yet proved, that eclampsia of the second variety is not caused directly by this microbe, but by the action of the toxic products of its activity upon the nervous system, when modified by pregnancy.

A. Charpentier⁵ writes upon the treatment of eclampsia from the basis of a clinical experience, which he has divided into three classes: The first treated by blood letting; the second with sedatives, that is, chloroform or chloral; and the third by the prompt termination of labor. He is an advocate of active interference when labor is already underway, but refuses to induce labor unless in very exceptional cases. He bases this refusal upon the following theoretical considerations: He believes emptying the uterus may ameliorate the condition of albuminuria and eclampsia, but cannot cure it, as it depends on a renal lesion, which may not disappear with the delivery of the child; the induction of labor requires a longer time than is consumed in an eclamptic attack; any excitation of the uterus is sufficient to cause a convulsion; the manœuvres necessary to the induction of labor necessarily furnish such excitation. He mentions forced labor only to condemn it. He recommends the administration of chloral by enema in doses of one drachm of the drug every five or six hours, and uses chloroform at the time of each seizure, advising conservative treatment till labor appears. If labor is fairly rapid, he deprecates interference, but, in case of delay, permits the use of forceps.

Charpentier believes that venesection may be of value in cases where congestive symptoms are permanent, and especially where there is reason to believe in the existence of congestion of the lungs or brain. He thinks that, though not in itself a cure, it can be counted upon to diminish the frequency and force of the eclamptic seizures. His conclusions are as follows:

(1) Whenever a trace of albumen is found in the urine of a pregnant woman, she should be put at once on a rigid milk diet.

(2) When the convulsion occurs in a strong woman of full habit and is accompanied by marked cyanosis, bleed and administer chloral as described.

(3) If the patient is delicate and the cyanosis is not extreme, the treatment should be limited to the use of chloral.

(4) Let labor appear spontaneously, and be concluded by the efforts of nature whenever this is possible.

⁴ Annales de Gynecologie.

⁵ Nouvelle Arch. d'Obst. et de Gyn.

(5) Should interference be necessary, deliver as rapidly and with as little manipulation of the uterus as possible.

(6) Interference should never be resorted to till the os is fully dilated.

(7) Labor should be induced only in the very exceptional cases, in which all other methods fail to check the attacks.

(8) Never resort to forced labor.

One is struck by his entire neglect of the active treatment of the skin and kidneys, upon which American obstetricians have been accustomed to place the first reliance; and we cannot but believe that his objection to forced labor, that is, gentle but rapid dilatation of the os and subsequent immediate extraction of the child, under full surgical anæsthesia, is due to the fact that he has reserved it for desperate cases, and for them only, instead of resorting to it, as is the practice here, whenever the convulsions are so frequent and severe as to make the prognosis for the mother really grave, or whenever in milder cases the patient's condition fails to improve under conservative methods.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

REGULAR meeting, Monday, January 1, 1894, DR. J. STEDMAN in the chair.

DR. M. F. GAVIN read a paper on

THE RADICAL CURE OF HYDROCELE.¹

DR. GAY: I have used the pure carbolic acid treatment in three cases, and it is a pretty severe treatment and not a very certain one; so I long ago gave that up. At one time the red oxide of mercury was talked about. It consisted in tapping the hydrocele, and then with a small director or grooved probe carrying a little of the oxide into the sac. It seemed to me a bungling way. Then I learned the method I think a good deal of, and that is tapping, emptying thoroughly and injecting two ounces of the compound tincture of iodine. The compound tincture is especially indicated, because that mixes thoroughly with water or with this fluid of the hydrocele. It is squeezed about inside of the sac, so that all parts shall be bathed with it, and then all that will is allowed to run out of the canula. I have used this treatment a few times in my office, and so far I like it. I never have had but one uncomfortable result from it, and that was a spasmodic retraction of the testicle. This in one case was rather uncomfortable for two or three weeks, but it finally passed away, and the man got a complete cure of his hydrocele. The only points about it are, that the sac is to be thoroughly emptied, the compound tincture to be used, and enough used to thoroughly moisten the inside of the sac, and then the superfluous part to be allowed to run out. The pain for two or three minutes is intense, and then it gradually quiets down, so that by the time the patient leaves the office he has a feeling of warmth in the scrotum. I do not claim this as a universal cure; but, aside from the pain, it is a very good way of treat-

ing the hydrocele that are not too old. I think Dr. Gavin's classification is an excellent one. The old ones want something more than injection.

DR. BURRELL: I was not fortunate enough to hear Dr. Gavin's paper. There is one point about the question of radical cure for hydrocele of which I should like to speak. Of late I have been making open incisions and packing the sac of a hydrocele. I have been strengthened in my opinion that this was the wisest procedure by what I have found inside the sacs. Not infrequently I have found bits of fibrinous material which acted as foreign bodies, which were a constant source of irritation, and which kept up the effusion of fluid into the tunica vaginalis. This has led me to lean strongly towards the more radical operation of opening and seeing the condition inside the sac than to the more indefinite method of injection.

DR. RICHARDSON: I am sorry I was not able to hear Dr. Gavin's paper. I have preferred when possible to dissect out the sac entirely. My experience with milder methods, like injections of iodine and carbolic acid, is very limited. I have seen all methods fail except the dissection and removal of the sac. This is surely the end of the hydrocele, but in many instances the method is severe. With a patient unwilling to submit to so radical a measure I have always intended to use the method of injection. Such methods are very desirable in those cases in which for any reason it is unsafe to etherize or to subject the patient even to the slight dangers of radical excision of the tunica vaginalis.

DR. GAVIN: I should like to ask Dr. Richardson if he had a simple case of hydrocele come to his office, who had not been tapped, if he would recommend excision without any treatment to begin with?

DR. RICHARDSON: If the patient wishes to be absolutely certain of cure, and if there is no reason against the operation, the best plan is to dissect out the whole tunica vaginalis except the portion that covers the testicle. I prefer this method because I am used to it, and it is always successful. The operation should be limited to simple drainage when the sac is very thick and adherent. In children I make a simple puncture of the sac with a glover's needle,—a method which sometimes succeeds and sometimes does not.

I do not wish to be understood as opposing the method recommended by Dr. Gavin, for I have had no experience with it. I have no doubt that his method will be found admirable in a great variety of cases. Now and then, however, one will be found in which the fluid will return. This recurrence is seen in all operations upon hydrocele except that of complete extirpation of the tunic. In one instance I found a hydrocele of the cord which pressed upon a hydrocele of the tunica vaginalis, the two being blended into one tumor; this accounted for the return of the hydrocele. The second attack was a hydrocele of the cord.

Perhaps I am too much inclined to give the patient the more radical operation first, for there is certainly no objection to trying the methods which may be called palliative. The last radical operation that Dr. Mumford and I performed was about two weeks ago upon a man of seventy. I had tapped him for a long time, and advised him to continue that treatment. He decided, however, to have a radical cure. We removed the tunica vaginalis entirely, and he has made a most satisfactory recovery.

¹ See page 210 of the Journal.

DR. G. W. GAY read a paper on

MALIGNANT DISEASE OF THE RECTUM.*

DR. BURRELL: I have been very much interested in the paper presented by Dr. Gay. Recently I have twice supposed that I was going to operate upon a case of hemorrhoids, and a careful rectal examination under ether showed the presence of malignant disease high up in the rectum; and I believe that a high rectal examination cannot be too strongly insisted upon before any operation about the sphincters is undertaken.

In reference to Dr. Gay's position in regard to the radical cure of cancer in the rectum, I am very much disappointed at his outlook. I have been looking at the operation for the relief of cancer in the rectum in a much more favorable light. After listening to the report of his cases, especially the one in which after four years the disease returned, I shall be very loath to speak of any permanent cure of a case under four years. Before I heard Dr. Gay's paper I had arranged the operations for cancer in my mind in this way: Excision of the growth in the lower end of the rectum, and a Kraske operation for excision of the growth in the upper part of the rectum. I have come to believe that an iliac colotomy is the operation of selection as a palliative measure. It is simple; the relief is very great; and it has seemed to me a preferable operation to lumbar colotomy, which requires a deep dissection; and the location of the two openings is in favor of the iliac operation, as an artificial anus in this position can be better controlled. In favor of the Kraske operation, I can say that I have one patient upon whom I operated two years ago, and whom I have seen within a month, where there has been no return of the disease. I shall evidently have to wait longer before claiming a permanent cure.

But setting aside for a moment the question of its being a radical cure, I think there is a word to be said in reference to the Kraske operation as a palliative operation. On comparing it with lumbar colotomy and iliac colotomy, an iliac colotomy simply taps the stream of feces above the disease, and leaves the growth *in situ*; and while occasionally it is possible to make a spur in the bowel which shall prevent feces passing beyond the artificial anus, yet this is often unsuccessful. This has always seemed to me an objection to colotomy, in that it does not deal with the disease *in situ*. On the other hand, the Kraske operation, as I have recently performed it, does not seem to me as severe as it sounds in description. To speak of the removal of the coccyx and the removal of a portion of the sacrum, seems a great deal, as we listen to it; but if carefully and rapidly performed, and especially if, after removal of the coccyx and a portion of the sacrum, one cuts into the right cellular interspace and practically shells out the rectum by a "dry dissection," there is but very little bleeding. On clamping the rectum above the growth and below, a quick excision of it can be made; and even if the peritoneal cavity is opened, it can be sutured, and but little danger exists of infection, especially if the patient is kept in a semi-upright position.

By the Kraske operation we have all the benefit of a colotomy, plus the great relief of the complete removal of a mass of malignant disease, which, of course, may return in the future. Patients after a Kraske operation are very comfortable, have but little pain,

and when a pad is properly adjusted can go around with but little inconvenience to themselves and no offensiveness to others.

DR. J. C. STEDMAN: During my service on the house-staff of the Post-Graduate Hospital, New York City, I find, on looking over my records, in the service of Prof. Charles B. Kelsey, 14 cases of malignant disease of the rectum treated by him; and of these, 10 were treated by inguinal colotomy, two by extirpation (Cripps's method and Kraske's method), one by inguinal colotomy first and subsequently amputation of rectum, and one was discharged without an operation. Twelve of these cases were discharged very much relieved and improved; and two died in the hospital. As most cases of malignant disease of the rectum consult the surgeon three or four months after they complain of the first symptoms, it only remains for the surgeon to give them some form of temporary relief, for in these cases they will generally suffer a great deal before they will make up their minds to accept the treatment proposed by the surgeon. Therefore it is according to the extent of the disease and the severity of the symptoms that will determine the line of treatment to be carried out, whether simply palliative or more radical. As most of the cases of cancer of the rectum treated by Professor Kelsey in the Post-Graduate Hospital were those where the disease was advanced three months or more, and not only the rectal walls, but the surrounding tissues were involved, he therefore performed inguinal colotomy on most of them, as the best plan of treatment for the immediate relief of distressing symptoms and also prolongation of life. If the bowel is diseased within three inches of the anus, and from examination it is thought to involve only the gut, then Professor Kelsey may perform Cripps's operation, or proctotomy; and if the disease is above that and below the promontory of the sacrum, and the gut only involved, then he may perform Kraske's operation, or else amputation of the rectum; but generally he prefers inguinal colotomy, and presently I will give his reasons for the same.

I will not take the time to review the 14 cases in detail, but only to state, in general, that most of them were suffering with burning sensation in the rectum; great pain on going to stool, with frequent desire and great tenesmus, and passing large quantities of blood and mucus; losing flesh and strength; having in some cases fulness over the abdomen; not able to sleep well at night, but constantly getting up to use the commode, and suffering great pain. Of course, these cases were in various stages of development, generally three months to a year from the time they noticed the first symptom, and located in different parts of the rectum, and in one case in the sigmoid flexure.

Professor Kelsey prefers inguinal to lumbar colotomy for several reasons: It is an easier and quicker operation, and as safe if not safer in these days of antiseptic surgery. Another great point in its favor is the convenience to the patient in keeping the parts clean, as compared with the difficulty and inconvenience of doing the same in the lumbar region; and the terminal portion of the gut can be more easily cleaned out of any fecal or irritating matter which may collect in it.

The technique of the operation, as performed by Professor Kelsey, has been admirably described by Dr. Gay. I will simply lay more emphasis on the silver wire which forms the spur, as Dr. Kelsey is very particular in regard to forming a good spur in the

* See page 204 of the Journal.

bowel. The silver wire is passed an inch from the right of the line of incision, and half-way between the middle and lower thirds of the incision, through the muscular walls, peritoneum, under the gut, through the mesentery, and up the opposite side an inch to the left of the incision, and then drawn tight and fastened with the lead button and slot. It thus forms an excellent spur, and when opened serves as a barrier to the feces from passing down the terminal end of the bowel. The colon is left intact for two days, unless for some counter-indication, in order to allow the peritoneum time to adhere firmly to the colon, and thus prevent extravasation of feces into the abdominal cavity. It is then opened with a curved bistoury and scissors, cutting well down to the line of incision, no ether being necessary. From that time on, the patient, as a rule, will have one to three normal movements a day. The wire is taken out at the end of the fourth day, and the patient is generally sitting up at the end of the tenth day.

The wound, immediately after the operation, is dressed; first, with Lister's protective next to the bowel and incision, to prevent the parts and dressings from becoming matted together by the effusion of lymph; next to that, bichloride pad and gauze, cotton and bandage. After the gut is opened, a simple dressing of sheet-lint, vaseline, cotton pad and bandage is all that is used. At the end of the third or fourth day the distal end of the bowel is generally irrigated with a weak solution of carbolic or bichloride, or even hot water—either from anal opening or the inguinal. When the patients leave the hospital they either use one of Dr. Kelsey's trusses, made for the purpose, or the pad and bandage mentioned above.

Professor Kelsey's reasons for preferring inguinal colotomy are these, as he has stated to the class over and over again; they will be found in the fourth edition of his works on rectal diseases:

"It prolongs life by the relief of pain. It substitutes in many cases a painless death for one of great agony; . . . does away with the constant tenesmus and discharge from the rectum, which by their exhausting effects are the immediate cause of death; delays the development of the disease by preventing the straining and congestion of defecation; prevents absolutely the complication of intestinal obstruction, which is another cause of death; enables the patient to sleep, eat and gain flesh; and often makes him think himself cured in spite of the plainest prognosis to the contrary. Instead of passing his days and nights upon the commode, wearing out his life in the effort to free the bowel from its irritation, he has one or perhaps two solid fecal evacuations from the groin in twenty-four hours. Is it pleasant to have the gut end in the left groin? No. But after a very few days the patient with cancer of the rectum, whose anus has been placed in the groin by the surgeon, will tell you that life, from having been a constant torment, has again become worth living."

Another reason is, the mortality is less in inguinal colotomy than in any other operation for malignant disease of the rectum. During my service with Professor Kelsey, he performed 16 inguinal colotomies:

10 were for malignant disease of the rectum.

2 were for non-malignant stricture.

1, ulceration, with stricture.

1, extensive dysenteric ulceration.

1, dysenteric stricture.

1, stricture of sigmoid flexure from pelvic cellulitis, with abscess.

Of these 16 cases, two died; the others were discharged much relieved and improved.

I speak of these for this reason; it is thought by many physicians, and very naturally so, of course, that it is very disgusting to have an anal opening in the groin and that patients object to it very much. Now my experience in the hospital has been the reverse of what would be supposed. Over and over again, the patients have said, in person or by letter, that "they would not return to the old order of things—pain, tenesmus, blood, etc.—on any account"; that they were perfectly satisfied and very much pleased with the relief obtained. And of the lesser evil, inguinal colotomy is to be preferred; and in most cases they have gained strength and flesh.

Therefore, the good results obtained, as regards quickness of operation, relief of distressing symptoms to patient, and prolongation of life, makes inguinal colotomy the line of treatment preferred by Prof. Charles B. Kelsey in the great majority of cases of malignant diseases of the rectum.

DR. M. H. RICHARDSON: I am very much interested in the practical aspects of this paper. We owe a great deal to the older men who call our attention to the results of their experience in diseases of this kind. As our experience gets larger, and after we have seen so many recurrences following operations for cancer, we cannot but become more and more conservative in advising surgical interference. Some years ago I looked up the ultimate results of all the operations performed upon cancer at the Massachusetts General Hospital for ten years. The results in breast cases were encouraging, especially after the radical operations performed in the later years. Cancer of the tongue was invariably fatal sooner or later. I did not investigate cancer of the rectum; I took it for granted that the patients were all dead. At the present time, nevertheless, I do not feel as hopeless in regard to malignant disease of the rectum as Dr. Gay does. In the first place, we must be very careful that our examination is thorough in cases of suspected cancer of the rectum. If we examine thoroughly every case of suspected cancer, and take nothing for granted, we discover frequently facts of the greatest importance, and at times avoid errors in diagnosis that would be laughable if they were not tragic. I remember a case that came to me with a diagnosis of cancer of the rectum—a hopeless case. On careful examination I found a carious coccyx surrounded by inflamed and thickened tissues quite like cancer on careless examination. I removed the dead bone and the man recovered. In connection with the difficulties of diagnosis at times, I would like to speak of a man operated on in one of the New York hospitals, for malignant tumor of the bladder. He recovered perfectly from a very brilliant operation. Later I examined him, and told his friends that he could not live. There was a long scar in the linea alba, in the mass of an evidently recurrent malignant tumor. He had a hopeless recurrence, as I thought; but I heard the other day that he got perfectly well, and is now at work in perfect health. This was a mistake in diagnosis, even after the greatest care in examination, in operation, and in gross inspection of the tumor: followed by the most expert microscopical examination. We ought, nevertheless, to have a microscopic examination in every case.

The only favorable instance of removal of malignant disease of the rectum in my practice was that of

a jeweller who had to sit all day on a high stool, and who noticed very early some trouble in his rectum, which I supposed to be cancer. I operated on him three or four years ago; a year later I repeated the operation for a recurrence, though I had no idea that the man would permanently recover. Yet he has been well ever since. Presenting at first the general and local characteristics of malignant disease, he now has become robust, and there is no local recurrence. But the disease was not cancer; it was a malignant adenoma, with infiltration and induration. The pathologists have told me that in the cases of malignant adenoma, if we can get the disease all out, the prognosis is very good. While operating, we should have always at our elbow the microscopist, as we should have in abdominal work the bacteriologist.

In regard to the Kraske operation and its modifications, I have seen this operation performed, but I have never found a case of my own in which it seemed best to perform it. The mortality is 28 per cent., as recently reported by Kraske, and by Schide 35 per cent. — somewhat higher than Kelsey's.

I have performed many times the operation of inguinal colotomy, but I have never felt obliged to make a spur. Almost always the operation has been performed for cancer of the sigmoid flexure. I have operated in the left groin, right groin, and median line for the disease. For cancer of the rectum colotomy has been done very infrequently in my practice. I have never seen any subsequent distress or discomfort from the absence of a spur, though I dare say that this is completely at variance with the experience of others. In one instance I opened in the left and found a distended coil of intestine, fastened it to the groin, and opened immediately. The opening proved to be in the head of the cæcum. The patient lived about a year in a state of comparative comfort, resumed his duties in college, gave his lectures, and told me the year had been a year of satisfaction and happiness. I do not say that it is not a good plan to make a spur such as Dr. Kelsey has described, or one like that which Dr. Keene has just reported, but I have not seen any good reason for following the method in my own cases. I dare say that it is better in some instances to provide for the total escape of the contents through that opening, but not infrequently strictured bowel becomes pervious. In several cases the artificial anus has closed entirely, the discharges have resumed their normal course, and the patient has been relieved from the discomforts of the artificial opening. Under these circumstances the local discomfort from obstruction and from tenesmus has also disappeared.

It is said in cancer of the rectum, as in cancer of the breast, that three years of immunity after operation means cure. I do not believe in this time limit — at least not enough to feel safe as to recurrence even after five or six years. Absence of recurrence after operation on the breast at the end of three years is no certain assurance that the patient is safe. Those who have watched the progress of enlarged axillary glands when only the breast has been removed, must have observed how slowly at times they grow. In certain instances it has taken two or three years before they could be very perceptibly felt; yet, of course, the cells of the disease have been there and have been proliferating. I do not believe, therefore, that we can adopt any such limit as three years, and say that if the disease returns before three years it is not a cure, while

if it returns after three years it is a second and wholly distinct attack. In looking up a very large number of cases of breast-cancers there were many instances in which after four, five, or six years the disease had not returned; on the other hand, there were one or two cases in which after four or five years there was a recurrence. In cancer generally, therefore, I do not feel sure that the patient is permanently cured until many years have elapsed without a sign of reappearance.

DR. GAVIN: My experience for relief in malignant disease of the rectum has been wholly confined to colotomy. I have always done the lumbar colotomy. I have done that operation eight or ten times. I have never had any difficulty about the absence of the spur. I had one case at the City Hospital two and one-half years ago. A man had complete obstruction of the bowel. I did the lumbar colotomy. He went out well and engaged in his ordinary occupation, and a year and a half later he came to my office to know if he could not have that thing sewed up. A few months later he died. Lumbar colotomy has always given relief to the patient, and I have no doubt prolonged the life of the patient.

DR. PAUL THORNDIKE: I want to say a few words about the Kraske operation, as compared with the anal operation of Mr. Cripps. While it is true that we are not justified to-day in promising our patient a cure from either of these operations, it is also true that both have distinct and well-defined places in surgery. In cases when the disease is low down near the anus we do the Cripps operation, hoping for a radical cure, and sure that if our patient survives we shall have prolonged his life and lessened his pain. For these same reasons should we make use of the Kraske operation in cases when the disease is higher up in the rectum. The former operation has a mortality of 10 to 15 per cent., is bloody and inaccurate. The latter operation has a slightly higher mortality — 15 to 20 per cent. — is less bloody, and offers an easy, direct road to the diseased bowel, thus making possible a very careful and thorough removal of the diseased area. It is an operation which seems more severe than it really is, and which is not receiving the attention it deserves in this country. Whatever may be our belief as to the possibility of radical cures of rectal cancer, there is a certain percentage of cases when the disease is apparently well defined and limited to the anal region, where it is plainly our duty to try for a radical removal of the disease. Just so there are other cases when the disease is higher up in the bowel, where the Kraske operation is demanded.

DR. RICHARDSON: I hope that my remarks will not be understood by Dr. Thorndike as opposing this operation. I did not intend to oppose it, because I have seen it most successfully used in the hands of Dr. Cabot; moreover, it seems to me at times a most desirable procedure. I spoke of the dangers from having seen Schede's and Kraske's mortality recently reported — one of 28 per cent. and the other 35 per cent.

I have demonstrated the anatomy of this operation time and again at the school; it is a beautiful way of getting at the rectum. I have not performed the operation because I have not seen a case in which it seemed wise to apply it. In the hands even of an experienced operator it is one of the bloodiest operations I have ever seen. I remember one of the first cases at the hospital; the hæmorrhage was so great that we had no

idea that the patient would live; but she did live, and a very satisfactory result followed. I was surprised to hear Dr. Thorndike say this is a palliative method. I had supposed it was intended to be the most radical of radical measures.

I have seen recently described a method of bringing the upper part of the bowel down into the lower, so as to prevent formation of fistula and to restore the function of the bowel. If this could be performed successfully, we should have a most desirable condition of things, — the absence of opening in the groin and re-rotation of the alimentary canal; yet it seems to me that the dangers are great, and that they must be great until we have had considerable experience in performing the operation.

In regard to the difference between the lumbar and inguinal colotomy, I should like to see Dr. Gavin a convert to the inguinal method. I abandoned entirely the lumbar route, after having performed the Littré operation a few times. The advantages of the latter method are so great, both as to *technique*, and as regards the subsequent ease of the opening, that it seems to me very certain that lumbar colotomy will be performed only in those cases of obstructive cancer which are situated too high up for the inguinal incision.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

A STATED meeting was held at the Medical Library, Boston, on Wednesday, February 7, 1894.

The meeting was called to order at eleven A. M. by the President, DR. JAMES C. WHITE. One hundred and nine Councillors were present.

APPOINTMENT OF DELEGATES AND COMMITTEES.

On nomination by the Chair, the following delegates to other State medical societies were appointed:

Maine: Drs. J. E. Garland, of Gloucester; M. H. Richardson, of Boston.

New Hampshire: Drs. J. G. Blake, of Boston; C. C. Odlin, of Melrose.

Rhode Island: Drs. F. W. Goss, of Roxbury; R. H. Faunce, of Sandwich.

Connecticut: Drs. G. E. Francis, of Worcester; C. H. Cook, of Natick.

New Jersey: Drs. C. A. Carlton, of Salem; H. Colt, of Pittsfield.

Committees were appointed:

To Audit the Treasurer's Accounts: Drs. G. G. Tarbell, A. D. Sinclair.

To Examine the By-Laws of District Societies: Drs. S. D. Presbrey, F. W. Chapin, H. J. Barnes.

In accordance with the recommendation of the Committee on Medical Diplomas, it was voted that the degree of Tufts College Medical School be recognized by the Society.

The principal interest in the meeting centred about the report of the Committee on Securing Uniformity in Censors' Examinations. The President, as Chairman of the Committee, offered the report, and made remarks in support of the statements in the preamble. The report was as follows:

At a meeting of the Councillors, held October 2, 1893, the report of the Committee on securing Uniformity in

Censors' Examinations was presented. To it objection was raised that it might exceed the limitations of the charter. The subject was thereupon referred to a new Committee, to be appointed by the Chair, and to include the President himself. The Committee thus appointed, consists of one member from each District Society.

Your Committee has carefully considered many plans for the establishment of a uniform examination of candidates for admission to this Society. The present status for admission is somewhat as follows: Different standards are established by eighteen different Boards of Censors, not acting in concert, and having only in common the welfare of the Society. The objections to this plan are the following:

(1) That in certain Districts a comparatively severe examination is held for admission to the Society; that in other Districts a comparatively easy examination is held.

(2) That the Boards of Censors, as a rule, are composed of young men but a few years out from the Medical School, who are naturally sharper critics than the older Fellows of the Society.

(3) That at present the Boards of Censors know very little of the requirements for admission into other State Societies.

(4) That there are many excellent regular practitioners scattered throughout the State, and that their number of late has been increasing, who are not members of the Society. This is owing to failure on their part to present themselves for admission to the Society, and this failure is due to their wishing to avoid the rigor of an examination conducted by young men; in many instances by rival practitioners.

We believe that it will be for the interest of the Society to establish a uniform standard of examinations throughout the Commonwealth, and further that such examinations shall be elastic at the discretion of the Censors, in order that practitioners of established reputation shall not be hindered from entering the Society.

In order to accomplish this object your Committee respectfully suggests that the Councillors and the Society authorize the following changes in the By-Laws.

(1) By-Law I to be changed by striking out part of line 21 on page 9, and lines 22 to 26 inclusive, and substituting the following words, so that the By-Law shall read, "and, by such further examination as the Censors shall deem expedient."

(2) By-Law XIII to be changed by omitting the words "five Censors," in line 22, and adding in line 23 the words "five Censors, all of whom shall have been Fellows of the State Society for at least ten years, one of whom shall be also a Councillor, and be designated a Supervisor, and Ex-Officio Chairman of the Board of Censors."

(3) By-Law XIX to be changed by adding after the word "held," in line 19, the words "they shall appoint the time and place of the annual meeting of the Supervisors";

(4) After the title "Censors," commence By-Law XX with the following additional provisions relating to supervisors:

The Censors, elected Supervisors, shall form a Board.

They shall elect their own Chairman.

The Recording Secretary of the State Society shall be their Secretary.

For the transaction of business ten Supervisors shall constitute a quorum.

They shall hold an annual meeting at such time and place as the Council shall direct; and may hold other meetings at such places and times as they may agree to appoint.

At their annual meeting, or adjournments thereof, the Supervisors shall formulate and adopt a uniform plan, consistent with the requirements of the By-Laws, to be pursued the ensuing year, by each District Board of Censors, in the examination of candidates.

They may authorize the Secretary to have printed, at the expense of the Society, all blanks and examination papers necessary to carry out their plans.

The Secretary shall furnish examination papers, to Su-

persors only, and in such number as each may, in writing, request.

It shall be the duty of each Supervisor to convey to the Board of Censors of the District Society to which he belongs, together with the necessary examination papers, a report of the method and spirit in which the Board of Supervisors have directed that their plan should be used, and to see that in all examinations the designated details are properly executed.

Should a candidate otherwise qualified, but without a diploma from one of the schools accredited by this Society, satisfy the Censors of the District Society where he resides, by examination, that he has received an education equivalent to that prescribed by the By-Laws of this Society, the Supervisor of said District Society shall present the name, standing and qualifications of said candidate, to the full Board of Supervisors at their next meeting, whereupon the assenting votes of two-thirds of the Supervisors present and voting, shall elect such a candidate to be a Fellow of this Society.

(5) By-Law XX to be changed by adding after the word "By-Laws," in line 2, the following, so that the By-Law shall read: "The Censors shall examine, according to the rules and By-Laws, and in conformity with the directions of the Supervisors," such candidates, etc.; also after the word "day," in line 21, by adding the following, "but not at the same hour or hours."

(6) By-Law XXI to be changed by substituting the word "supervising," for the word "senior," so that this By-Law shall read, "and the supervising Censor shall preside."

DR. J. C. WHITE, *President.*

DR. G. W. DOANE,	DR. J. F. A. ADAMS,
DR. F. A. HUBBARD,	DR. B. J. HANDY,
DR. R. B. ROOT,	DR. A. H. JOHNSON,
DR. A. C. DEANE,	DR. W. H. POMEROY,
DR. D. W. MINER,	DR. S. W. KELLEY,
DR. H. B. HOWARD,	DR. E. R. CUTLER,
DR. M. V. PIERCE,	DR. J. F. WELCH,
DR. H. F. BORDEN,	DR. J. H. MCCOLLUM,
DR. E. B. HARVEY,	DR. F. H. THOMPSON,

Committee.

After discussion by Drs. HARVEY, WILLIAMS, WHEELER, FRANCIS, F. C. SHATTUCK and CUTLER, it was voted:

That the report be accepted, and that the changes in the By-Laws, as far as the Council is concerned, be adopted.

The Librarian reported that, in accordance with the vote at the last meeting, the publishers were notified that no orders for future numbers of "Braithwaite's Retrospect" would be given, and that an acknowledgment of the receipt of the notice had been returned.

The Treasurer offered the following votes, which were adopted:

Voted, That the Librarian shall be the custodian of such papers, manuscripts and books of record belonging to the Society as are not in use by its officers. He shall properly catalogue them, and see that they are stored against the risk of fire. He shall arrange and file them in such a manner as to promote the convenience of Fellows of the Society who may desire to consult them. He shall include in his annual statement a report upon their condition.

Voted, That as the Censors are officers acting for the State Society, the different Boards of Censors are hereby directed to forward to the Librarian of the State Society such books of record as are not in present use.

On motion, the question of the reduction of the annual assessment was taken from the table.

Voted, That the subject be indefinitely postponed.

In accordance with notice given at the last meeting, DR. FORSTER moved, and it was voted, that Rule 2 of the Rules and Orders of the Councillors be annulled. The following was the rule in question:

"There may also be annually prepared, under the direction of the Councillors and at the expense of the Society, a retrospect of the medical literature and science of the preceding year, having reference especially to discoveries and improvements of practical value."

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPÆDIC SURGERY.

STATED Meeting, December 15, 1894, W. R. TOWNSEND, M.D., Chairman.

CONGENITAL TORTICOLLIS.

DR. ROYAL WHITMAN presented two cases of congenital torticollis complicated by induration of the sterno-mastoid muscles. The induration of these muscles was not the cause of the torticollis, but was secondary to it.

The first infant, now five months of age, was first seen at the age of three months. There was at this time well-marked left torticollis, hemiatrophy of the face, and congenital club-foot on the same side. In the middle of the contracted muscle there was an induration the size of a pigeon's egg. The labor was normal. The distortion of the head and the induration were noticed by the mother on the fourteenth day after birth. This induration in the muscle could still be felt, and the torticollis and hemiatrophy of the face were very evident.

The second infant, now seven months old, was first seen at the age of six weeks. Then, as now, there was marked torticollis, and an induration in the muscle, similar to that in the preceding case. In this case the child was delivered by forceps after a difficult labor. Immediately after birth the mother noticed the distortion of the head.

That the torticollis in the first case was of intra-uterine origin was shown by the hemiatrophy of the face and by the club-foot. That scar contraction had nothing to do with the deformity in the second case was proved by the fact that the deformity was noticed immediately after birth. Injury at birth might have caused the deformity, but not scar contraction following rupture of muscle. Simple rupture of a normal muscle, shown by induration, was not, as a rule, accompanied or followed by torticollis.

POTT'S PARAPLEGIA.

Dr. Whitman also presented a case of Pott's paraplegia in which a rather unusual form of paralysis was the very first symptom. About the first of last October the child, two years of age, was noticed to be stumbling; when first seen by the speaker, about two weeks later, there was not the slightest pain, and no angular deformity. The paralysis was of the flaccid type like that of anterior poliomyelitis. At the present time, two months after the appearance of the paralysis, there was still no angular deformity of the spine, although a change in outline due to muscular spasm was apparent. Within a week there had been complaint of pain, and the paralysis was now of the spastic type.

PERSISTENT PSOAS CONTRACTION.

Dr. Whitman presented still another patient, a boy nine years of age, who illustrated an extreme and persistent psoas contraction. When first seen, about two years ago, there was deformity of the mid-dorsal region, with slight psoas contraction; subsequently while under the care of an instrument-maker, an abscess formed, which opened spontaneously. The deformity of the spine was not well-marked, and the leg was firmly held at a right angle with the body. It was probable that an extensive tenotomy and fasciotomy would be required to bring it down to the normal line. He was inclined to think, that, if psoas contraction were allowed to persist, it exerted a very unfavorable influence on the deformity, because it was impossible to maintain by apparatus a proper attitude.

DR. V. P. GIBNEY said the occurrence of paralysis before the deformity was exceedingly rare, and in a series of fifty cases of Pott's paraplegia which he collected at one time, it was the rule for them to develop at first a little stumbling, but examination failed to show exaggerated reflexes until some time later. It was well to emphasize the fact, so apt to be overlooked by the general practitioner, that Pott's disease may occur without the pain or other usual signs described in the books. These are the slow cases of "caries sicca."

He did not agree with Dr. Whitman that it was necessary to treat the psoas contraction itself under ordinary circumstances. If one could exclude hip-joint disease, there need be no hurry about much treatment directed to the contraction.

DR. WHITMAN said that psoas contraction caused by true psoas abscess, that is, abscess within the sheath or substance of the muscle, was very likely to become permanent distortion, as illustrated by the case that he had presented — a distortion which made it impossible for the child to stand erect. Psoas contraction was best treated by temporary rest on the back, and by the direct treatment of the abscess which caused the contraction.

THE LORENZ TREATMENT OF HIP-DISEASE.

DR. V. P. GIBNEY presented a patient with hip-disease, who was being treated by the Lorenz method. This consists in applying a plaster-of-Paris spica bandage to a point midway between the knee and the foot, and then on the following day adding an iron stirrup which projects beyond the foot, and is secured by a starch bandage. It is claimed that with a high shoe on the sound foot the patient is able to go around easily. It would probably prove very useful where a good perineal crutch was not easily obtainable.

EXCISION OF THE HIP.

Dr. Gibney presented several cases of excision of the hip. The first one was that of John K., who was admitted to the hospital on October 8, 1892, at the age of eight years. The limb could then be flexed to 110° , and extended to 145° . After about one month of treatment in bed with the weight and pulley, a hip-splint was applied. On December 2d, an abscess was aspirated, but as it soon refilled and began to burrow, a partial arthrectomy was performed, and by the following February extension and flexion were nearly normal. On May 31st, he was discharged, still wearing the splint. There is now about one inch of shorten-

ing; flexion to nearly 90° , and extension to 170° ; the other motions are very fair, and the hip seems to be quite firm.

The second case was a boy admitted on October 12, 1891, at which time there was but a small range of motion. The disease began the year previous, and during that year he had an abscess. As there was marked abduction, it was treated with the Taylor abduction brace. On November 21, 1891, the limb could be extended to 170° , but the limb was everted. On January 6th it was noted that he was wearing a Thomas brace, and that there was much spasm and tenderness. An abscess on the anterior aspect of the limb was aspirated, and a few drops of pus removed. On May 17th, the trochanter major, with the head and neck of the femur, were removed. He remained in the country all the summer, and in the following November it was found that extension could be made to 180° and flexion to 110° . The next March an abscess formed in consequence of a fall, so it was incised and several ounces of pus evacuated. He was discharged the following September without a brace, but wearing a one-inch-high shoe. At present, the limb comes down straight, and can be flexed to 90° ; there is little resistance to abduction; there is slight adduction and rotation, and one inch shortening.

The third case was a boy who was four years old when his disease began in February of the present year. He was admitted in June; and in spite of repeated aspirations, a large abscess with marked deformity persisted, so that on November 10th, excision was performed. The wound healed very rapidly. On December 15th, a jointed Dowe's splint was applied.

The fourth case was a boy, five and a half years old, with a double hip-joint disease which began in May, 1891. His right hip was excised in Christ's Hospital, Jersey City, three months after the beginning of the disease. When first seen by the speaker the left hip was painful, and there was an abscess in this locality. The joint was excised on November 24th by posterior incision, and the head and neck removed. The case has done well.

These cases were presented to show that in hospital practice, there is a certain number which seem to require excision and which do well after it. None of the cases had a weak joint.

DR. A. M. PHELPS said he had seen this Lorenz brace applied many times. It was better than the Thomas splint, for it protected the limb, and it was superior to the long-traction splint, for the cases treated with it did not recover with the angular deformity so commonly seen after the use of the long-traction splint. The objections to the Lorenz splint were that it was cumbersome, that the patient walked upon it, and it did not apply extension in the line of the adductor muscles to prevent intra-articular pressure. With it abscesses were just as frequent as with the Thomas splint, and there was almost always shortening.

He heartily agreed with all that Dr. Gibney had said about the cases of excision. He had abandoned aspiration of abscesses, for eventually they must be incised. If by aspiration the presence of pus in a joint were detected, the sooner the abscess was incised, the better. By this means one was also enabled to explore the joint with the aseptic finger, and so determine whether or not an excision was required. No one could tell this from external examination alone. He favored the posterior incision and the removal of the

great trochanter in order to secure free drainage; in short, Dr. Sayre's method of leaving the periosteum and packing the wound with antiseptic gauze was still the best mode of treatment.

The CHAIRMAN dissented very emphatically from the opinion that the aspirator was useless, and that all these abscesses should be incised. In a series of cases of abscess which he had collected, nearly fifty per cent. were permanently relieved by aspiration. There were many abscesses situated near joints which were not intra-articular, and also many abscesses supposed to communicate with a joint until examined at the time of operation, when it was found that they did not.

DR. N. M. SHAFFER said no abscess was opened in the Orthopedic Hospital during the year; yet he would be perfectly willing to compare his results with those of Dr. Phelps.

DR. REGINALD H. SAYRE objected to the Lorenz treatment, as shown in this patient, on the ground that a good deal of pressure was borne by the hip, because part of the weight fell on the condyles of the femur instead of on the ischium. He had been much pleased with the cases of excision; and he would contrast the motion in these joints with the ankylosed joints which Dr. Whitman said at the last meeting the Germans considered to be superior. The European operators were not careful to save the periosteum.

DR. HALSTED MYERS said that in connection with this discussion he wished to report a case. A girl, when six years of age developed hip-disease; and two months later an abscess formed. After wearing a traction splint for six months, the joint was excised. She was kept in the hospital without a brace for a year, and was then discharged "cured." Soon after this she slipped, and another abscess developed. She was again admitted, and five months later was discharged cured. Three years after this she had another fall, and another abscess appeared, which was cured in three weeks. One and a half years afterward still another abscess formed, and was cured in four months. In September, 1893, or when she was fourteen years old, there was found to be three and one-quarter inches shortening, an increase of three-eighths of an inch in the last two years; there was also slight telescoping. The motions allowed in the joint were: flexion 180° to 140° , adduction 30° , abduction 10° , and considerable rotation. She had no abscess, no pain, and no longer wore a brace. She limped badly, but did not tire easily. The case seemed to show that after such excisions, the shortening might be steadily progressive, and also that all the disease was not removed at the time of excision, else there would not have been these frequent abscesses.

DR. WHITMAN said he had been misunderstood at the last meeting, for at that time he was speaking of excision done as a last resort, and not of the class of cases represented by the patients just presented. Reproduction of bone after excision, with a firm and movable joint, was a result to be hoped for, but not confidently expected.

DR. SAYRE regretted if he had misquoted Dr. Whitman; but he had himself recently noticed a number of German articles in which it was stated that a stiff joint represented the result which should be sought for after excision for tubercular disease of the hip.

DR. GIBNEY, in closing the discussion, said he regretted that Dr. Phelps still persisted in the belief

that every abscess in a tubercular joint should be incised. Regarding Dr. Myer's case, he said he did not see how the limb could grow when the upper epiphysis had been destroyed, whether by cicatricial tissue or by the removal of the epiphysis.

EXCISION OF THE TARSUS FOR CARIES.

DR. A. M. PHELPS presented a girl who had been brought to him at the Post-Graduate Hospital, two months before, with disease of the tarsus and the end of the tibia. At the operation it was found that the disease involved the astragalus, os calcis, cuboid and scaphoid bones, as well as the ends of the metatarsal bones and the end of the tibia, so these parts were all removed, leaving a shell of bone with the periosteum. At the end of six weeks the case was dressed, and it was then found that there had been perfect reproduction of the entire tarsus, and of nearly all of the metatarsal bones, together with the end of the tibia. Finding a metastasis in the scapula, the spine of this bone was removed.

DR. GIBNEY said he had treated very successfully a number of cases of extensive disease of the entire tarsus without operation. The results were perfect in the great majority of such cases.

DR. S. KETCH said that very badly diseased tarsæ were often cured by simple protection and avoidance of traumatism and pressure. It had been his experience that disease of the ankle-joint was usually followed by better functional results than disease of the other articulations.

DR. PHELPS said that when, on cutting into the tarsus the bones were found separated and necrotic, he thought no protection would be of much importance.

LAMINECTOMY FOR TUBERCULAR DISEASE OF THE SPINE.

DR. CARL BECK presented a patient on whom he had performed laminectomy. He was first seen two years ago, and was then three years old. Resection of the shoulder was first performed for the removal of tubercular foci in the humerus. One year later it was found that there was some rigidity and pain in the spine. He was treated for some time in one of our hospitals, and when he came again to the speaker, it was found, on removing the plaster dressing that there was a kyphosis. He was greatly emaciated, and there was a large fluctuating tumor in the left gluteal region. An incision was made into this abscess; and after inserting a drainage-tube and gauze, he was placed in a Rauchfuss apparatus. After three weeks, a plaster jacket was applied, and he was treated as an out-patient. Soon after, a prominent kyphos appeared at about the ninth dorsal vertebra, and the child had paraplegia. An incision was made from the seventh to the last dorsal vertebra; and on exposing the spinal cord, it was found that the meninges were hyperæmic and thickened. Free drainage was established for the abscess, and the fistulæ curetted and packed with gauze. He was again placed in the Rauchfuss apparatus. His condition had greatly improved since the operation, and he hoped that eventually the child would be able to discard the plaster jacket. The open treatment, the speaker considered the treatment *par excellence*.

Dr. Beck then exhibited a new instrument for use in connection with these abscesses; he called it "the irrigation trocar."

A NEW OPERATION FOR THE RELIEF OR CURE OF ROTARY LATERAL CURVATURE OF THE SPINE. PROPOSED FOR DISCUSSION OF THE SECTION.

DR. SHAFFER read a short paper describing a new operation which he proposed for the relief and cure of rotary lateral curvature of the spine. After having performed it several times on the cadaver, he had proposed it in a certain case of a young girl, when the rotation had progressed steadily and persistently in spite of all that could be done with mechanical treatment, exercises, etc. The surgeons to whom he had proposed the operation, in formal consultation, did not approve of the procedure, not that the surgical risk would be so great, but rather on account of our present imperfect knowledge of the pathology of these persistent and inveterate curves. Under these circumstances he brought the subject before the Section for discussion.

The operation proposed is as follows:

A large curved incision is made, which extends from one inch above the upper end of the pathological curve to one inch below it. An incision is now made through the trapezius muscle, which with the superficial tissues is dissected off until the erector spinæ is fully exposed. This is now divided transversely, as many transverse incisions being made as there are intervertebral articulations to loosen. The fibrous tissues between the transverse processes are divided so far as possible. A curved director is then passed under the costo-transverse ligament, which is divided with a blunt-pointed, curved bistoury. All the accessible soft parts having now been divided, a forceps lever is placed between the transverse processes, and they are gently forced apart. In the cadaver, after the costo-transverse ligament was divided, it was found that the articular processes could be easily forced apart, and the vertebræ separated on the concave side of the curve.

In the cadaver it seemed easy to avoid the spinal artery and nerve, and with care there seemed to be no danger of wounding the pleura.

In view of the recent operations upon the spinal column, it seemed to the reader of the paper that the proposed operation was both feasible and justifiable, especially as applied to rotary curves of an inveterate type, if recognized in the early stage.

DR. WHITMAN said the case of Dr. Beck was evidently suffering from double psoas contraction, and that as the attitude exaggerated the deformity, the treatment should be rest on the back.

DR. PHELPS said he had done seven laminectomies—two for Pott's disease, and five for fracture. The latter had yielded more favorable results. He believed laminectomy should be performed in cases of Pott's disease where paralysis was present, where there was incontinence of urine or feces, and where there were abscesses and every indication of extensive disease of the bone.

DR. SAMUEL LLOYD had been much interested in this case. The latest statistics showed that 103 laminectomies had been performed for Pott's paraplegia simply. Dr. Phelps has summed up the indications for operating well, but had applied Lauenstein's rule too rigidly, as this rule had never been intended to apply to other than traumatic cases. The number of cases requiring laminectomy was very few, and the operating surgeon should not attempt to operate until

he had satisfied himself that efficient mechanical treatment had been employed previously without success.

Dr. Shaffer would find a good precedent for his operation in those operations which had been done for rotary and lateral dislocations of the spine. As the pleura was thickened, it was likely to be pushed aside out of harm's way, and the hæmorrhage should be the same as in laminectomy, that is, it should be readily controlled by packing.

DR. KETCH said he did not consider laminectomy for Pott's disease a justifiable operation except where it was done as a life-saving measure. He agreed with the last speaker that the continuance of paraplegia or the presence of incontinence of urine and feces were no guides to the operation. He thought most of the cases of Pott's disease operated upon would have done just as well without operation.

DR. I. S. HAYNES said that it should be remembered that a thick layer of tendinous fibres was present, and should be thoroughly divided in a number of places. Again, nothing could be gained until the anterior costo-transverse ligament had been completely divided. No arteries of importance were encountered. Primary union was very desirable, for if healing occurred by granulation, the cicatricial contraction would only serve to aggravate the original condition.

[Discussion to be continued at next meeting.]

Recent Literature.

Anæsthetics: Their Uses and Administration. By DUDLEY WILMOT BUXTON, M.D., B.S., Member of the Royal College of Physicians; Member of the Royal College of Surgeons of England; Administrator of Anæsthetics and Lecturer in University College Hospital, the National Hospital for Paralysis and Epilepsy, Queen's Square, and the Dental Hospital of London. Second edition. Philadelphia: P. Blakiston, Son & Co. 1892.

This is the second edition of this work, which has done much towards systematizing our knowledge of anæsthetics. It is written from a historical as well as a practical standpoint; but while many different forms of inhalers are shown, the author has not given the advantages or disadvantages of each apparatus. The author's conclusions regarding the value of different anæsthetics are judicious. The effect of chloroform is well described.

The book will well repay perusal by those administering anæsthetics.

A Practical Treatise on Nervous Exhaustion (Neurasthenia): Its Symptoms, Nature, Sequences, Treatment. By GEORGE M. BEARD, A.M., M.D. Edited, with notes and additions, by A. D. ROCKWELL, A.M., M.D. Third edition, enlarged; 8vo, pp. 262. New York: E. B. Treat. 1894.

To the third edition of this well-known work the editor has added a brief chapter on the etiology and pathology of nervous exhaustion. In this chapter he speaks of the changes in the nerve cells caused by fatigue, and points out the relations such changes may bear to neurasthenia. He also touches upon the influence which the conditions of American life have in producing the disease.

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FEEBLE-MINDED CHILDREN.

SIR DOUGLAS GALTON has written an interesting article in the *Nineteenth Century*, in which he calls attention to the importance of making special provision in the elementary schools for training those children who are more or less defective, or who are suffering from mal-developments which are associated with defects in the brain.

To Dr. Francis Warner belongs the credit of having suggested methods for carrying into effect an inquiry into deviations from the normal in children in various London elementary schools. He has now reported on over 80,000 children seen individually by him in 148 schools, having taken notes of all cases presenting any visible defect, that is, 14,297 children. The method of procedure was as follows: "As the children stand in rank, each is viewed separately, without being touched, or questions asked. The child is then directed to imitate a few simple movements. Any deviation from the normal in bodily development or in conformation of the head or a feature is recorded; also any abnormality in expression, balance, movement of the eyes, or action in the hand or fingers is noted as an 'abnormal nerve-sign,' indicative of the state of the nerve-system, and these particulars are recorded in schedule forms." A full description may be found in the "Report on School-Children," by Dr. Warner, to the Charity Organization Society, 1892.

Statistics of the first 50,000 children seen (1890-1891) have been arranged and presented to the Local Government Board; this report is now published by the Bureau of Education, Washington, D. C.

Four primary groups of cases were easily arranged: "development cases," including all children presenting one or more defects; "nerve cases," each child presenting one or more "abnormal nerve-signs"; "nutrition cases," children pale, thin, delicate; "dull children," as reported by the teachers in school.

The same children often appear in more than one group; thus, of the "development cases," 52 per cent.

also presented abnormal nerve-signs; and of the "nerve cases," 60 per cent. were also "development cases." Of the children "pale, thin and delicate," 71 per cent. of the boys, and 74.6 per cent. of the girls were also "development cases." In these figures, we see the physical co-relation of congenital defective development producing a tendency to nerve-disturbance and low nutrition of body.

In all schools, a larger proportion of boys than girls deviate from the normal. There is, however, a rather larger proportion of girls who are "pale, thin and delicate"; and congenital weakness in constitution, however slight, renders a girl more likely to ill-health than a boy; and any nerve disturbance occurring in her is more liable to be rendered permanent than in the boy. When, however, we take boys and girls presenting no defect in development, we find the proportion who are delicate equal in both sexes. Let the teacher then, arrange the curriculum for the normal girls, and modify it when necessary for the weaker members. Neglect of the latter precaution may lead to deplorable results; but the whole level of the school need not be lowered to the capacity of the weaker pupils.

One defect stands prominent among the girls: cranial abnormalities have the highest co-relation with defectiveness of health and brain power. The sub-class "small heads" forms 3.4 per cent. among English girls, as compared with 1.3 per cent. for boys, and is largely attended with mental dulness, low nutrition, and abnormal nerve-signs. Of girls in industrial schools, 6 per cent. were "small headed"; this condition is more common among the children of large blocks and warehouses.

Many points of direct educational importance have been elucidated. It has been shown that of the group of children presenting abnormal nerve-signs, 41 per cent. are dull mentally; and in a varying degree the same may be said of children presenting each separate nerve-sign. As examples: many children do not move their eyes properly in looking at objects, but turn the head toward the point looked at in place of moving the eyes; 43 per cent. of these children were reported as dull by the teachers, they are bad readers and bad observers. If this condition is known to the teacher, the fault may be corrected; eye-movements should be trained in the kindergarten.

A listless attitude in the pupil is not conducive to mental aptitude, but it is not generally understood that a good balance of the body in every detail, even to the hand and fingers, promotes in the brain an aptitude of mental brightness, and that cultivation of symmetry and accuracy in movement and attitude promotes a healthy brain state; yet such appears to be the truth. In removing abnormal balances and action in movement, the teacher helps to improve the activity and balance of brain.

It is most commonly among boys that we see frowning, or the formation of horizontal creases on the forehead by muscular action; this is very common among

imbeciles — and it may be added, in monkeys also. Now such a boy will often cease to frown when he is interested; that lesson improves his brain during which frowning ceases. This condition is much more frequent among boys in the monotonous life of the Poor-Schools than in the elementary day-schools. It is the "development cases" that tend the most to defectiveness of brain-power and to low nutrition; such cases do the best in the day-schools. Their educational neglect tends to fill the ranks of pauperism, criminality, and the unemployed.

In one school, fourteen children were promptly taken to the Ophthalmic Hospital for correction of squint and other defects; their needs had not been noticed before.

The number of children presenting defective condition of the eyes is large; uncorrected squint is very common, and though this defect is often preventable by the use of spectacles, comparatively few pupils use them among those who ought to. Eye-diseases in all stages, often contagious cases, were seen in many day-schools, and other examples of preventable conditions. Here is a large field for good work. The want of correction of faults by the teachers, and neglect of cases needing medical treatment probably arise mainly from ignorance of existing conditions; but it may be hoped that a more widely spread attention to the study and observation of children among all classes will inspire a more intelligent interest in their care and training.

Defectiveness of body, brain-weakness and low nutrition are evils confined to no social class; it appears, on comparing the conditions of 10,000 children in schools of the middle and upper social classes with 26,000 children in poorer day-schools, that in each of the four primary groups of defects the proportion goes against the children of the upper class. This is very surprising and needs further inquiry.

The greater the number of visible defects in a child, the greater is the probability of its being dull; so that of children appearing in three of the primary groups of defects, 44 per cent. were said to be mentally dull.

The children presenting certain of the "abnormal nerve-signs," are those commonly called nervous children; they are usually intelligent and quick at lessons; they are imitative and gregarious. Whether it is advisable to allow such children to sit together at school is questionable; on the other hand, dispersed among the more average pupils, they tend to impart their quickness.

It has been shown by observation that spontaneity is the foundation of intelligence, yet the attempt is often made to keep young children quiet and almost motionless — often destroying spontaneity in place of co-ordinating it. The endeavor should be to encourage spontaneity, and to co-ordinate it to intelligent action adapted to the age of the child.

Spontaneity of movement to the extent termed *idgetiness* is often the result of fatigue and exhaustion; if teachers were acquainted with the signs of

fatigue, they could better control the child's condition. Fatigue in children is common; it may be the result of bad sleep, late hours, excitement of home life or school work. The signs of fatigue may be marked in the morning and lessen during the hours of school; or they may be most apparent in a certain class-room, if it be ill-ventilated and overcrowded. There is a small class of pupils presenting well-made bodies and well-acting brains who are said by teachers to be very dull, and doubtless this is true. Such children should not be discouraged; they may become useful members of society, and need not be treated exceptionally; though they have often been spoken of as idiotic, which is not true; and it is discouraging to give them a bad name.

Galton's article is full of valuable suggestions, showing that a more exact knowledge of the physical and mental conditions existing among children is needed. The scientific principles which have enabled the observer to detect the various degrees and items of mental weakness already point the way to their removal; and were instruction in such studies given to teachers and others, the methods of classification and training might be reduced to better order and adapted to the needs of groups of children.

THE INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY, VOL. XIV.

THE latest contribution to the Index Catalogue cannot be passed without notice, though this present volume was issued several weeks ago. It completes the Index through the word "universally."

The Index Catalogue has been published now for so many years that one grows retrospective in the contemplation of another volume. Perhaps no publication of recent years has done more for the general good of the profession than this. Its influence has been felt in many directions and it is by no means easy to define exactly its effects. Perhaps they show themselves chiefly, but by no means exclusively, in our literature. The knowledge of previous writings on any subject is more easily gained as the Index approaches completion, and in consequence the writings of our forbears is less often overlooked; and medical men have gained the habit of looking at their unusual cases as but the experience of a single man which needs to be compared with similar experiences on the part of others, in order that it may have its proper value. In this way the classification and knowledge of unusual cases has increased.

One thing is very noticeable. The "Curious Cases" have vanished from our periodical literature, certainly from the more important journals. Authors and editors have learned that the title of a medical paper must give some clue to its contents if the case is to have any value beyond a mere curiosity and the facts narrated are to be of any service. Many a case which might be considered as absolutely unique is found to be but a repetition of previous experience by reference to

records which are made accessible by this Index. It must also be said that the value of genuine observations is made manifest, and thus the record of cases is encouraged.

Medical libraries have grown in a way hitherto unequalled since the Index Catalogue has given an added value to their contents; yet it is rumored that the principal promoter of this valuable work has said, we presume in a careless moment, or at a time of such self-depreciation as occasionally comes to all busy workers, that he would rather have done a single piece of original work, however small, than have compiled this Index.

In one of the best regimental histories of the late war, the editor speaks as follows of some of his old comrades:

"We know men in the Thirteenth . . . with a record that every man who respects courage and fortitude under trying circumstances would be glad to take off his hat to when meeting them on the street, but only their comrades know what soldiers they were. You never hear them mention the fact, for they see nothing heroic in anything they did themselves, while they imagine that every man did something better."

This quotation does not seem out of place here, for it illustrates the way in which modest men often regard their own accomplished deeds.

One of the interesting things one finds in this volume is the catalogue of testimonials to the qualifications of eminent aspirants for medical appointments—a collection which must be of equal value with the portraits of medical men; though it is doubtful if any hint of the human frailties inevitable to us all could be found in these testimonials.

MEDICAL NOTES.

AMERICAN VISITORS AT THE INTERNATIONAL MEDICAL CONGRESS.—Prof. N. J. Johnston-Levis, of Chiatamone, Naples, desires to inform American visitors that he will be pleased to aid and advise those medical gentlemen who will visit Naples at and about the time of the International Congress.

SMALL-POX IN A PITTSBURGH HOSPITAL.—A case of small-pox occurred this week in a general ward at the West Pennsylvania Hospital in Pittsburgh, and the board of health has ordered a quarantine of the hospital, which contains some 950 patients and over 100 nurses.

INTERNATIONAL SANITARY CONFERENCE.—The International Sanitary Conference at Paris has already formulated a series of measures to prevent the Mecca pilgrims from spreading the cholera. The subject of immigration to this country, which was suggested by the United States delegates, was laid aside for later consideration as not falling within the primary purpose of the conference.

THE RUSSIAN JAMBUL COMMISSION.—The Russian Government has sent a commission composed of physi-

cians to Asia Minor to inquire into the properties of the jambul plant, which has been reported to have marked efficacy in cases of cholera.

RESIGNATION OF DR. LATHAM.—Dr. Latham has resigned the Downing Professorship of Medicine in the University of Cambridge, England, after having held the post for twenty years.

THE WONDERFUL JICAMA ROOT.—The discoverer of the Mexican Jicama root, which has been found useful in cases of typhus fever, claims now that it will cure small-pox and yellow fever. The list is not yet extended further.

SEPTICÆMIA IN THE EDINBURGH MATERNITY HOSPITAL.—The Edinburgh Maternity Hospital has been temporarily closed in consequence of an epidemic of septicæmia. Several consecutive cases occurred recently; and no new patients have been admitted for the present.

FIRES IN ASYLUMS.—Two fatal fires have occurred the last week in asylums where great care should be exercised. One in the laundry building connected with St. Vincent's Male Orphan Asylum at Albany, N. Y. There were 130 boys in the main building who were at no time in immediate danger. The other fire was more serious and occurred at the New Jersey Training School for the Feeble-Minded in Vineland, N. J. The Robinson Memorial Cottage was totally destroyed and the inmates were rescued with some difficulty. The engineer and his wife were burned to death.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the eight days ending at noon, February 28th, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 35, scarlet fever 54, measles 19, typhoid fever 18, small-pox 12. There were four deaths from small-pox.

SMALL-POX IN MASSACHUSETTS.—During the week ending at noon February 28th, but two cases of small-pox have been reported to the State Board of Health from places outside of Boston, one each in Lawrence and Holyoke.

THE ANNUAL REPORT OF HARVARD COLLEGE: THE MEDICAL SCHOOL.—The report of the Dean of the Medical School in the annual report of Harvard College states the falling off in the number of matriculants this year—due probably to the change to a four years' course which went into effect at the beginning of last year—at twenty-five. Owing, however, to the large size of the higher classes the total number of students in the school will not be diminished. The diminution of the percentage of college graduates in the entering classes, previously noted and discussed, still continues. The causes of this, whatever they may be, are still operative. The percentage, having, between 1884 and 1892, fallen from 53.9 to 28.2, has in the present year dropped to 23. The President of the University directs the serious attention of the two

Governing Boards and of the University Council to this tendency, which, in his estimation, threatens the best interests both of the school and of the community. The school is in a sound financial position, and the total expenditure for salaries, which in 1891-92 was \$47,212, has been raised in the year 1892-93 to \$67,112. During the year a laboratory of experimental therapeutics has been established for carrying on original investigations and for training advanced students in pharmacological research.

THE DENTAL SCHOOL. — The number of students in the Dental School is steadily increasing; there were fifty-three matriculants the past year. The instructors continue their diligent and self-sacrificing devotion to the interests of the school. A new building with increased accommodations and greater facilities is more and more needed with the increase in the number of students. The attempt made a year ago by the Faculty and friends of the school to raise a building fund, started under favorable auspices, but has been much interfered with by the prevailing financial depression. The fund now amounts to \$18,000, and \$20,000 more are urgently needed for the purchase of a desirable lot which the Faculty has in view.

THE VETERINARY SCHOOL. — The encouraging growth in the number of students previously noted, has been fully maintained. But the school is in great need of endowments for prosecuting its educational work to advantage. The annual deficit in the finances of the school is made up from the receipts of the hospital, the work of which is thereby restricted. The Dean gives expression to this need in the following closing sentences of his report: "I feel that I must lose no opportunity of urging the endowment of this totally unendowed school. As has been shown, we can use even a few hundred dollars a year to great advantage; for we have here a well-founded institution, at which a science of the widest usefulness to mankind, and the greatest humanity to dumb animals, is being well and thoroughly taught to good classes of bright and earnest young men; but this established institution is sorely in need of more room in which to carry on the work which its own prosperous career has brought it. It certainly seems remarkable to one who knows what has been accomplished by this department of the university during its short life, and how much need there was that the subject should be taken up by a strong American university, that among all the generous givers to the higher education, among the many who are interested in questions of public health, and among all those who love horses and dogs, none have yet been found willing to give us material financial support. The school is not an experiment; it is an assured fact. Where else has a scientific school, in any subject, ever been established that has fought the battle of the higher against the lower education successfully without endowment of any sort?"

FIRE IN A NEW HAMPSHIRE INSANE ASYLUM. — A fire occurred in the Rockingham County (N. H.) Insane Asylum last Sunday, but was fortunately ex-

tinguished with small loss. No cause has been discovered for the fire.

SMALL-POX IN WATERBURY, CONN. — A case of small-pox was discovered on Monday in Waterbury, Conn., in a house occupied by six families aggregating twenty-nine persons.

NEW YORK.

TUBERCULOSIS IN CATTLE. — It is said that there are at present about twenty thousand head of cattle in the State which are affected with tuberculosis and have been condemned by the health authorities, but which cannot be destroyed for lack of funds to accomplish this object and compensate the owners. A bill has recently been introduced into the Legislature providing for an appropriation for the purpose of awarding proper compensation to those whose cattle it is found necessary to kill on account of this disease.

A CASE OF TRAUMATIC PULMONARY TUBERCULOSIS. — An interesting case of pulmonary tuberculosis, the exciting cause of which was traumatic in character, has just terminated fatally in the person of Dr. Robert N. Manney, a veterinary surgeon residing at Morrisania, in the annexed district of this city. Two years ago Dr. Manney got into an altercation with a blacksmith, and was stabbed in the side by the latter. The knife penetrated one of his lungs, and as a result of this injury tubercular disease eventually developed.

ST. MARK'S HOSPITAL. — The new building of St. Mark's Hospital, on Second Avenue, near Eighth Street, was formally opened on February 17th. The building can accommodate about sixty patients, and the operating facilities of the hospital are of an admirable character.

THE GERMAN HOSPITAL TRAINING SCHOOL FOR NURSES. — The large new building erected for the Training School for Nurses of the German Hospital, at Seventy-fourth Street and Park Avenue, was opened with appropriate ceremonies and a reception on February 22d. It is five stories in height and is ninety-five feet long and twenty-five feet wide. There are two entrances upon the hospital grounds and from the basement a tunnel extends to the main hospital building. On the first floor are the apartments of the superintendent and his family, as well as a large lecture room, and the rest of the building has been fitted up for the accommodation of the pupils, forty in number. The cost of the structure was \$72,000.

MEMBERSHIP OF THE NEW YORK COUNTY MEDICAL ASSOCIATION. — At the last meeting of the New York County Medical Association, held February 19th, Dr. S. B. W. McLeod, who has been re-elected President for another year, delivered his annual address. In the course of it he gave an interesting review of the growth and history of the Association during the first decade of its existence. At the time of its first meeting for scientific purposes there were 109 members, and there are now over 950 on its roll. The first paper read before the Association was by the late Prof. Austin Flint, on "Pathological and Practical

Relations of the Doctrine of the Bacillus Tuberculosis." The meeting occurred January 14, 1884. During the ten years 75 members have been removed by death.

Miscellaneous.

A BILL RELATIVE TO VACCINATION.

THE following bill, relative to vaccination, was introduced in the Massachusetts Senate by Senator Harvey, of Worcester, and has been referred to the Committee on Public Health:

SECTION 1. Parents and guardians shall cause their children and wards to be duly vaccinated before they attain the age of two years. For every year's neglect, the party offending shall forfeit the sum of ten dollars.

SECT. 2. The board of health in any city or town shall require and enforce the vaccination and re-vaccination of all the inhabitants thereof whenever in the opinion of said board the public health or safety requires such action. Every person over twenty-one years of age, not under guardianship, who neglects to comply with such requirement, shall forfeit the sum of ten dollars.

SECT. 3. The board of health in any city or town shall furnish the means of free vaccination or re-vaccination to all the inhabitants thereof whenever in the opinion of said board the public safety requires it.

SECT. 4. Incorporated manufacturing companies, superintendents of almshouses, State reform schools, industrial schools, lunatic hospitals and other places where the poor or sick are received, masters of houses of correction, jailers, keepers of prisons, the warden of the State prison and superintendents or officers of all other institutions supported or aided by the State, shall, at the expense of their respective establishments or institutions, cause all the inmates thereof to be vaccinated or re-vaccinated whenever in the opinion of the board of health, in the city or town in which such establishments or institutions are situated, the health of the inmates thereof or the public safety requires such action.

SECT. 5. Sections fifty-one, fifty-two, fifty-three, fifty-four and fifty-five of Chapter eighty of the Public Statutes are hereby repealed; *provided*, that nothing herein contained shall be construed as affecting any action that may be pending under said sections at the time of the passage of this act.

Our readers will find the substance of the existing law stated on page 22 of this volume of the JOURNAL.

ACTING ASSISTANT SURGEONS.

THE Association of Acting Assistant Surgeons has been endeavoring for some time to have Congress remove a technical disability of rank which prevented the members from obtaining admission to certain organizations. A bill has been introduced in both the Senate and the House of Representatives which is intended to provide for such cases. The following extract from the preamble and the bill will show its purpose.

"Whereas, Because these acting assistant surgeons were not commissioned as officers, but were employed by contract as such, they are denied admission to military organizations like the Loyal Legion and the Grand Army of the Republic; and to relieve this unjust discrimination, and to give a proper recognition to their patriotism, duties, responsibilities, services, hardships and exposures, they ought to be entitled to receive the rank for which they are allowed

pensions and which will relieve them from these disadvantages. The appended bill is offered for this purpose. It involves no expense to the United States Government and no change in the relative rank of officers of the medical corps of the United States Army who have been or are now in the service of the United States; Therefore,

"Resolved, That private physicians who were employed as medical officers in the armies of the United States for a period of not less than three months, and who were known officially as acting assistant surgeons of the United States Army, and whose services were honorably terminated, shall be commissioned by the President of the United States as acting assistant surgeons of the United States Army; and the date of employment as acting assistant surgeons to be the date of commission and muster into service, and the date of the honorable termination of service as acting assistant surgeon to be the date of discharge or muster out of service;

"Provided, That no pay or allowance shall be made to any such acting assistant surgeon by virtue of this act; and this act shall not affect the rank, pay, or emoluments of commissioned medical officers of the United States Army."

SUICIDE IN NEW YORK.

THE Committee of the New York Medico-Legal Society appointed to consider the repeal of the existing law in New York relating to suicide have submitted the following report:

We recommend the repeal of the existing law punishing unsuccessful attempts at suicide, for the following reasons:

(1) It is wholly indefensible from the standpoint of this great principle, that all penal laws should have for their object the deterring rather than the punishment of crime.

(2) It in effect repeals the former laws making suicide a crime, and makes its unsuccessful attempt punishable only; so that its effect is to stimulate the would-be suicide to higher efforts towards self-destruction to avert the punishment it visits only upon failure.

(3) The act, therefore, instead of serving as a deterrent to the commission of crime, which should be the aim of penal legislation, is one which, in its whole scope and effect, incites to and probably actually increases the volume of this crime.

(4) Civilization, in the recent centuries, has regarded and treated suicide as a crime, and has attempted to so frame its penalties as to act as a deterrent upon the minds of those who sought or have contemplated it.

The majority of mankind would be influenced by any post-mortem punishment that would bring disgrace or reproach upon the names, family, or friends of the suicide.

The existing statute ignores the universal recent judgment of the race in relieving the successful suicide from all such restraints, with their conceded deterrent effects.

(5) A large proportion of suicides are confessedly those laboring under insane delusions. Unsuccessful attempts by such, under the existing statute, are pitiful examples of the incongruity and unwisdom of the law in its practical operation.

(6) It is claimed, and with great propriety, that the present statute is practically inoperative.

We respectfully submit that this enactment should no longer remain among our criminal statutes.

IN MEMORIAM.—SAMUEL M. DONOVAN, M.D.

QUINCY, MASS., February 20, 1894.

A breath of spring is in this winter morning; but its sweetness is tinged with profound sadness that Dr. Samuel M. Donovan whom so many have known so long as physician and friend, lies in the silence of death. His sunny

smile and cheery welcome are among the valued recollections of the past. With an accomplished mind that led him to a conscientious absorption of what his profession taught him, was a rare, refined taste that embraced whatever was fine in art, music and science. His acquaintance with roses was a particular element; and while we, duller, knew and loved them as roses; he had the species and variety of each especial flower at tongue's end.

Tenderness in him was of a delicate quality, especially towards children. "His quiver was full," but he did not pass by any child slightly. Meeting him one morning with his buggy crammed full of little ones, we pointed to one, asking, "Are they all yours?" "No," said he, "that one is not." "Why," said we, laughingly, "have you not enough of your own?" "Well" was the answer, "that little chap saw us, and wanted a ride, so I took him in." Lately, speaking of illness and weakness, he said, "I ask one thing, to see all my children grow up to be fine." Now, the little light-haired, blue-eyed brood are fatherless.

His ready assimilation of medical knowledge made him a valued physician. He was a fond husband and a good friend. He was prominent in our charitable work and among our poor. We were not ready to spare him; but resting in the hope that if his brief life had incompleteness here, and trusting that it will find full completeness in the beyond to which he precedes us, we lovingly, respectfully, lay this memento of a friend of many years, upon his bier.

A. E. F.

Correspondence.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA. COMMITTEE ON SCIENTIFIC BUSINESS.

PHILADELPHIA, February 15, 1894.

MR. EDITOR:—At its last meeting the Medical Society of the State of Pennsylvania appointed—under the provisions of a by-law proposed at Harrisburg and adopted at Williamsport—a Committee on Scientific Business, "to secure scientific papers and to provide scientific discussions for each annual meeting, and to co-operate with the Committee of Arrangements and Credentials in arranging the programme." The members of this Committee are Drs. Dulles, of Philadelphia; Gorgas, of Harrisburg; LeMoynes, of Pittsburgh; Tyson, of Philadelphia; and Towler, of Marienville. The object of this change in the law is to have a permanent committee which, becoming familiar with the subject, shall find it easier to secure good scientific work than is possible for a committee that is appointed new every year.

The Committee on Scientific Business is working in conjunction with the Committee of Arrangements, of which Dr. E. E. Montgomery is Chairman, and will co-operate with it in arranging the programme.

The Committee hopes that each member of the State Society will aid it in attempting to make the meetings of the Society of greater scientific importance than they have been in the past. To this end the Committee will welcome suggestions from any member of the Society and especially, at this time, offers of contributions to the work of the next meeting at Gettysburg, May 15th to 18th. It is desired that there should be as many brief, concise, practical papers as possible; and it is proposed to have a discussion on "Tuberculosis," devoting the morning to "Medical Tuberculosis," and the afternoon to "Surgical Tuberculosis."

Any communication from members of the Society in regard to the work of the Committee, will be welcomed by it.

Members of the Society desiring to read papers, or to take part in the discussion on Tuberculosis will please notify the Chairman of the Committee,

DR. CHARLES W. DULLES,
4101 Walnut Street, Philadelphia.

METEOROLOGICAL RECORD.

For the week ending February 17, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	
S..11	29.98	34	38	30	87	67	67	W.	W.	23	16	O.	0.16
M..12	30.22	21	27	15	61	100	84	N.W.	N.E.	11	24	C.	
T..13	30.10	18	28	8	100	60	80	N.	N.W.	20	17	N.	0.72
W..14	30.37	17	25	9	77	47	82	N.W.	N.E.	5	4	O.	0.86
T..15	29.45	31	38	24	100	69	94	N.E.	W.	22	12	N.	
F..16	29.98	18	25	11	67	66	62	N.W.	N.W.	20	17	F.	1.74
S..17	30.42	18	35	1	69	78	71	S.W.	S.W.	6	12	F.	
☾	30.17	31	14			77							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☾—Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 17, 1894.

Cities.	Estimated population for 1894.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Measles.	Scarlet fever.	
New York	1,891,806	856	351	16.32	22.68	7.30	3.24	2.28	
Chicago	1,438,000	376	149	19.98	11.61	5.34	.81	2.15	
Philadelphia	1,115,562	—	—	—	—	—	—	—	
Brooklyn	978,894	371	128	12.96	25.11	7.56	.27	2.16	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,897	214	66	12.60	25.38	6.58	—	1.88	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	—	—	—	—	—	—	—	
Cincinnati	305,000	102	38	5.88	17.64	1.98	—	—	
Cleveland	290,000	76	29	18.48	21.12	5.28	3.96	—	
Pittsburg	283,709	94	34	14.84	19.08	5.48	—	4.24	
Milwaukee	260,000	80	38	22.50	12.50	6.75	1.25	1.25	
Nashville	87,754	7	—	42.84	57.12	25.56	—	—	
Charleston	65,165	29	8	—	13.80	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	39	10	18.80	18.80	6.90	—	—	
Fall River	87,411	41	19	7.32	17.08	—	—	—	
Lowell	87,191	—	—	—	—	—	—	—	
Cambridge	77,100	38	16	21.04	21.04	—	—	18.41	
Lynn	62,666	19	—	15.78	10.52	5.28	—	—	
Springfield	48,684	15	4	—	20.00	—	—	—	
Lawrence	48,355	21	1	23.50	14.28	—	—	—	
New Bedford	45,888	19	7	21.04	15.78	—	—	15.78	
Holyoke	41,278	10	0	10.00	20.00	—	—	10.00	
Salem	32,283	8	2	12.50	23.00	12.50	—	—	
Brookton	32,140	8	2	—	8.33	—	—	—	
Haverhill	31,896	12	3	—	42.84	—	—	—	
Chelsea	30,264	14	5	—	28.56	—	—	—	
Malden	29,394	7	1	—	—	—	—	—	
Newton	27,666	5	0	—	—	—	—	—	
Fitchburg	27,146	—	—	—	—	—	—	—	
Taunton	26,972	7	0	—	14.28	—	—	—	
Gloucester	26,688	11	0	9.09	18.18	—	—	—	
Waltham	22,058	7	3	14.28	14.28	14.28	—	—	
Quincy	19,642	6	1	16.66	—	—	—	—	
Pittsfield	18,802	2	2	50.00	—	—	—	—	
Everett	16,585	7	2	—	14.28	—	—	—	
Northampton	16,331	3	1	—	—	—	—	—	
Newburyport	14,073	5	1	—	20.00	—	—	—	
Amesbury	10,920	2	0	—	—	—	—	—	

Deaths reported 2,521: under five years of age 919; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 441, acute lung diseases 504, consumption 304, diphtheria and croup 153, scarlet fever 57, measles 35, typhoid fever 32, diarrhoeal diseases 30, cerebro-spinal meningitis 22, whooping-cough 19, small-pox 18, erysipelas 15.

From typhoid fever Chicago 9, Milwaukee 5, New York 4, Cincinnati, Lawrence and Cleveland 3 each, Pittsburgh 2, Brooklyn, Boston and Cambridge 1 each. From diarrhoeal diseases New York 11, Chicago 4, Brooklyn and Milwaukee 3 each, Cleveland and Fall River 2 each, Boston, Worcester, New Bedford, Pittsfield and Marlborough 1 each. From cerebro-spinal meningitis New York and Chicago 5 each, Brooklyn, Cleveland, Lynn and Somerville 2 each, Worcester, Gloucester, Quincy and

Marlborough 1 each. From whooping-cough New York 5, Brooklyn and Boston 4 each, Cincinnati, Milwaukee and Fall River 1 each. From small-pox Chicago 13, New York 5. From erysipelas Chicago 6, New York 5, Boston 2, Brooklyn and Nashville 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending February 10th, the death-rate was 19.1. Deaths reported 3,830; acute diseases of the respiratory organs (London) 372, whooping-cough 138, diphtheria 89, measles 76, scarlet fever 46, fever 43, diarrhoea 33, small-pox (Birmingham 4, West Ham, Halifax and Bradford 1 each) 7.

The death-rates ranged from 12.1 in Croydon to 26.5 in Bristol; Birmingham 22.6, Bradford 16.3, Brighton 15.8, Huddersfield 18.0, Hull 21.8, Leeds 18.5, Leicester 13.5, Liverpool 24.2, London 18.4, Manchester 21.7, Newcastle-on-Tyne 18.6, Nottingham 20.5, Portsmouth 17.1, Salford 19.0, Sheffield 18.6, Swansea 19.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 17, 1894, TO FEBRUARY 23, 1894.

FIRST-LIEUT. BENJAMIN L. TEN ETYCK, assistant surgeon, U. S. A., will report in person to COLONEL JOSEPH C. BAILY, assistant surgeon-general, president of the examining board appointed to meet at Fort Sam Houston, Texas, at such time as he may be required by the board for examination as to his fitness for promotion.

A board of medical officers to consist of COLONEL CHARLES H. ALDEN, assistant surgeon-general; LIEUT.-COL. WILLIAM H. FORWOOD, deputy surgeon-general; MAJOR CHARLES SMART, surgeon; MAJOR WALTER REED, surgeon; CAPTAIN JAMES C. MERRILL, assistant surgeon, is constituted to meet at the Army Medical Museum Building, Washington, on the 12th of March, 1894, at ten o'clock A. M., for the examination of candidates for admission to the Medical Corps of the Army.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING FEBRUARY 17, 1894.

MURRAY, R. D., surgeon. To proceed to Key West, Fla., for special duty. January 26, 1894.

BAILLACHE, P. H., surgeon. Granted leave of absence for twenty days. February 6, 1894.

PURVIANCE, GEORGE, surgeon. Detailed as chairman, Board of Examiners. February 12, 1894.

STONE, G. W., surgeon. Detailed as member, Board of Examiners. February 12, 1894.

CARTER, H. R., surgeon. To report at Bureau for temporary duty. February 2, 1894. To proceed to Brunswick, Ga., Quarantine as inspector. February 6, 1894. Detailed as recorder, Board of Examiners. February 12, 1894.

WHITE, J. H., passed assistant surgeon. Granted leave of absence for seven days. February 17, 1894.

CARRINGTON, P. M., passed assistant surgeon. Granted leave of absence for thirty days. February 19, 1894.

BRATTON, W. D., passed assistant surgeon. Granted leave of absence for thirty days. January 20, 1894.

PETTUS, W. J., passed assistant surgeon. Granted leave of absence for thirty days. January 30, 1894.

VAUGHAN, G. T., passed assistant surgeon. To report to the Secretary of the Treasury for special duty. January 26, 1894.

YOUNG, G. B., assistant surgeon. Ordered to examination for promotion. February 14, 1894.

STIMPSON, W. G., assistant surgeon. Ordered to examination for promotion. February 14, 1894.

BROWN, B. W., assistant surgeon. Ordered to examination for promotion. February 14, 1894.

ROSENAU, M. J., assistant surgeon. Granted leave of absence for thirty days. February 26, 1894.

COFER, L. E., assistant surgeon. To proceed to Mobile, Ala., for duty. January 30, 1894.

EAGER, J. M., assistant surgeon. Granted leave of absence for four days. January 30, 1894.

BLUE, RUFERT, assistant surgeon. Granted leave of absence for eight days. January 26, 1894.

NORMAN, SEATON, assistant surgeon. Ordered to examination for promotion. February 14, 1894.

PROCHAZKA, EMIL, assistant surgeon. To proceed to New York, N. Y., for duty. January 24, 1894. To proceed to Buffalo, N. Y., for temporary duty. February 2, 1894.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at 19 Boylston Place, on Monday, March 5th, at 8 o'clock.

Readers: Dr. J. S. Greene: "The Obscure Origin and Indeterminate Course of Acute Infection, as Illustrated by a Case, Possibly of Multiple Neuritis, and by a Case of Malignant Endocarditis."

Dr. E. M. Greene: "Crystalline Deposits in the Urine; Their Occurrence and Significance."

Report of Treasurer.

Report of Committee on Admissions.

Appointment of committee to nominate officers for ensuing year.

JOHN C. MUNRO, M.D., Secretary.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place on Wednesday evening, March 7, 1894, at 8 o'clock.

The subject for discussion will be introduced by Dr. J. W. Elliot: "A Gall-Stone Removed by Opening the Common Bile Duct, the Wound in the Duct being Closed by Sutures."

Dr. G. W. Gay, R. H. Fitz, C. B. Porter, H. L. Burrell, J. C. Warren, A. T. Cabot, M. H. Richardson and W. M. Conant will briefly discuss the "Surgery of the Gall-Bladder."

CHARLES L. SOUDDER, M.D., Secretary, 1 Marlborough St.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, March 7th, at 8 o'clock, by Dr. John Homans. Subject, "Ovariectomy." Physicians are cordially invited.

ERRATUM.

In the note on the hearings of the Public Health Committee in last week's issue of the JOURNAL, the date for the hearing on public vaccination should be March 7th instead of March 5th as given.

RECENT DEATHS.

BENJAMIN STORER CODMAN, M.D., M.M.S.S., died in Boston, February 22d, aged seventy-eight years. He graduated from the Harvard Medical School in 1845. In 1855 he retired from practice and established the firm of Codman & Shurtleff, dealing in surgical instruments. He was a trustee of the Home for Intemperate Women.

DR. GUSTAV SCHENTHAUER, Professor of pathological anatomy in the University of Pesh, died January 28th.

BOOKS AND PAMPHLETS RECEIVED.

The Absorption of Immature Cataract, with Restoration of Vision. By J. Hobart Egbert, A.M., M.D., Ph.D. Reprint. 1893.

The Surgery of the Hand. Sarcoma of the Kidney; Its Operative Treatment. By Robert Abbe, M.D., of New York. Reprints. 1894.

A Human Embryo of the Second Week. Early Human Embryos and the Mode of their Preservation. By Franklin P. Mall. Reprints. 1893.

Proceedings of the Philadelphia County Medical Society. Volume XIV, Session of 1893. Lewis H. Adler, Jr., M.D., Editor. Philadelphia: Printed for the Society. 1893.

The Present Status of the Treatment of Uterine Fibroids. Etiology of Pelvic Diseases in Women and their Prophylaxis. By X. O. Werder, M.D., Pittsburgh, Pa. Reprints. 1893.

Antiseptic Therapeutics. By Dr. E. Z. Trouessart, Paris, France. Translated by E. P. Hurd, M.D. Two volumes. The Physicians' Leisure Library. Detroit: George S. Davis. 1893.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by William Pepper, M.D., LL.D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. In two volumes. Illustrated. Volume II. Philadelphia: W. B. Saunders. 1894.

Holden's Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at St. Bartholomew's Hospital; Member of the Board of Examiners, Royal College of Surgeons of England, etc. Sixth edition. Revised by A. Hewson, M.D., Demonstrator of Anatomy, Jefferson Medical College, etc. Three hundred and eleven illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

Original Articles.

OBSERVATIONS ON PNEUMONIA.¹

BY WILLIAM H. PRESCOTT, M.D.

ACUTE FIBRINOUS PNEUMONIA WITH UNUSUAL EXTENSION OF THE FIBRINOUS EXUDATION.

THERE is nothing of especial importance in the clinical history of this case. The patient, a man about thirty-five years old, was brought into the hospital with well-marked evidences of pneumonia. There was complete consolidation of the lower half of the left lung and slight breathing, with less well-marked consolidation in the lower posterior portion of right lung. The temperature was high, and the breathing very much accelerated. The condition of the patient steadily grew worse, and he died forty-eight hours after entry into the hospital.

The autopsy was made November 25th, twenty-four hours after death. The body is that of a slightly built man. The mucous membrane pale, rigor mortis well developed. The superficial veins over chest prominent. The face cyanotic.

Scalp slightly adherent. Dura mater of ordinary thickness. Pacchionian granulations well developed. The pia slightly cloudy. The convolutions of brain well marked. Brain slightly oedematous.

Subcutaneous fat slight in amount. Muscles red. Peritoneal cavity moist. The appendix bound down by old adhesions extending across from the ileum. These adhesions involved the proximal two-thirds of the length of the appendix, leaving the tip free. The peritoneum over appendix thickened. Diaphragm on right side at lower border of fifth rib; on left side, in fifth intercostal space.

In the left pleural cavity about 500 cc. of cloudy serum containing flakes of fibrin. Both cavities free from old adhesions. Lungs do not retract on removal of sternum. The precordial space small. On the anterior surface, especially over the upper two-thirds, there is a thick fibrinous deposit on the epi-pericardial tissues. The pericardial cavity is obliterated over the anterior upper portion by fresh, thick fibrinous adhesions. In the lower portion of the cavity there is a small amount of clear fluid. The visceral pericardium in its upper portion, extending especially over the root of the aorta, is covered with a thick fibrinous exudation, containing here and there small hæmorrhages. The myocardium is generally pale. Immediately beneath the pericardium where the exudation is thickest the tissue is somewhat opaque and contains small hæmorrhages.

The heart of ordinary size. On the right segment of the mitral valve near its attachment, there is a minute superficial erosion not more than one millimetre in extent, covered with a thin, granular, hæmorrhagic fibrinous deposit.

Over the entire pleural surface of the left lung there is a thin fibrinous exudation, and in the pleura beneath it there are numerous small hæmorrhages. Over other portions of the pleura the exudation is thick and yellowish, and is easily removed as an adherent membrane, leaving the underlying pleura cloudy. The upper lobe of this lung is hyperæmic, oedematous, and more solid than normal. On pressure much

blood-stained serum can be squeezed from the cut surface, and thick purulent exudation from the bronchi. The upper and lower lobes united by fresh adhesions. Fully two-thirds of the lower lobe is completely solid. The cut surface of this is gray, granular, and on pressure pus can be squeezed from the bronchi. The remainder of the lobe is intensely congested and partially solidified. Portions of the lobe will float in water. The costal pleura on the left side is covered with a thick fibrinous exudation. On being stripped off the vessels in it are enormously dilated, and hæmorrhages have occurred everywhere in the tissues. The intercostal muscle, especially in the upper half of the pleural cavity, appears swollen and softened. On section the intercostal muscle and subpleural tissues are thickened by an exudation which is intimately associated with the tissues. This exudation in places appears to extend through the entire thickness of the intercostal muscle, and there is apparently a sharp line separating it from the healthy tissues. At the apex of the pleural cavity a similar condition exists, and extends from here into the posterior mediastinum, and into the cervical regions. Some of the deep-lying cervical lymph-glands are reddened and swollen, and around them this fibrinous exudation is seen. In one place in the epi-pericardial fat there is a small collection of thick, creamy, gelatinous pus. The right lung is voluminous. The pleura smooth and free from fibrinous deposit. On section the lung is in general hyperæmic and oedematous. In the lower lobe there are scattered foci of consolidation varying in size from one to five centimetres. Pus can be squeezed from the bronchi in these places.

Liver is large. The surface pale. On section cloudy and opaque with indistinct lobules. The bile-duct free. The gall-bladder contains clear, yellowish bile.

The kidneys somewhat enlarged. Capsule easily stripped off. Surface smooth. On section, markings somewhat obscure. Cortex swollen and opaque. Glomeruli anæmic.

The spleen slightly enlarged. The capsule wrinkled. On section rather soft and dark. Neither trabeculae nor Malpighian bodies are visible. The adrenal glands and pancreas normal. The mucous membrane of stomach and intestines is hyperæmic, otherwise normal.

The mucous membrane of larynx and trachea is congested. Beginning in the lower part of the larynx and continuing uniformly through the trachea as far as the bifurcation, the mucous membrane has a granular appearance due to the presence of small vesicular-looking granules, of regular size, on the surface. This does not disappear on washing, but on gently rubbing the granules disappear and a thick fluid takes their place. This condition is due to small masses of the mucus distending the glands. The aorta and other arteries are normal.

ANATOMICAL DIAGNOSIS.

Acute fibrinous pneumonia with consolidation of lower lobe of left lung. Slight consolidation in upper lobe of left lung. Fibrinous lobular pneumonia of right lung. Acute fibrinous pleurisy of left pleura with extension of the process into the chest walls and into the posterior mediastinum. Acute fibrinous pericarditis with extension into myocardium. Acute endocarditis of mitral valve. Acute parenchymatous degeneration of liver, heart, and kidneys with slight fatty degeneration.

¹ A contribution to the forthcoming Medical and Surgical Report of the Boston City Hospital, from the Pathological Department of the Hospital, under direction of Dr. W. T. Councilman.

Cover-slips made from the lung, from the fibrinous exudation on the surface of the pleura and from the pericardium, showed large numbers of the diplococcus lanceolatus with well-marked capsule staining. In the fresh sections of the intercostal muscles the same condition was found. Fresh sections of the kidney showed swollen and granular epithelium in the convoluted tubules, with here and there minute drops of fat on the addition of acetic acid. The glomeruli were unchanged. Sections of the liver showed swelling and granular degeneration of the hepatic cells. Sections of heart showed a very slight fatty degeneration of the muscle. Portions of the various tissues were hardened in alcohol for further examination.

Microscopic examination of the consolidated portion of left lung. The alveoli are everywhere distended with fibrin and pus cells. Numbers of diplococci were found in the pus cells. Sections made from the less consolidated portions of this lung and from the areas in the right lung show a less advanced process. The vessels in the alveolar walls are dilated, and the walls themselves infiltrated with leucocytes. Within the alveoli there are small amounts of fibrin with numerous red and white corpuscles.

The most interesting conditions were found in the pericardium and in the pleura. The fibrinous exudation of the pericardium is very dense, and the fibrin is in places in the form of large, broad fibres which are frequently united together to form hyaline masses and a reticulum, somewhat similar to that in the diphtheritic membrane. In places it extends into the tissue of the myocardium. In these places there are numerous leucocytes, round and epithelioid cells between the muscular fibres. The muscular fibres appear swollen, and the nuclei are indistinct. In the least affected part of the myocardium there are no leucocytes in the tissue, but there are numbers of large epithelioid cells and round granulation cells between the muscular fibres. In these places there is no fibrin, and the muscular fibres themselves appear to be but little altered. Further back in the more affected portions the leucocytes are found, and with these masses of fibrin. Diplococci were found in great numbers in the exudation, both inclosed in the pus cells and scattered through the fibrin. None were found where the tissue contained only the epithelioid and round cells.

The process appears to invade the fat in the same way. In places, as observed with the low power, the fibrinous exudation and the leucocytes extend directly into the fat, passing along the connective-tissue septa.

On examination with a higher power, in the areas of fat, which under the low power appeared to be unchanged, there is a similar condition to that found in the myocardium. There are numerous large epithelioid cells between the fat cells, of the same character as those found in the myocardium. The fat vesicles themselves appear to be somewhat compressed and distorted by the formation of cells between them, but are otherwise unchanged. In some places only one or two of these larger cells were found, and in others they are more numerous. The inflammatory process appears to extend into the tissue along the lymphatics and blood-vessels. In one place a longitudinal section of a capillary is seen, the nuclei of which are swollen and granular, and the lymph sheaths of the larger blood-vessels are completely filled up with these large granular cells.

Examination of the intercostal muscle shows a

similar condition. The fibrinous exudation with leucocytes extends into this, generally in the form of large bands in the intermuscular septa. There is also an extension in the muscle nearest the pleura between the individual muscular fibres. In the most affected places the muscular fibres are swollen, granular and necrotic; the nuclei do not stain, and they have lost the cross striation. In advance of the fibrinous exudation with leucocytes, there is simply a cellular infiltration without either fibrin or leucocytes. The cells in this are almost all of them large epithelioid cells with a clear, brightly staining nucleus. In one or two places nuclear figures were found in these large cells. Diplococci were only found associated with the presence of the leucocytes and fibrin.

A rabbit was inoculated from the fibrinous exudation in the intercostal muscles, a small portion of the muscle being placed beneath the skin of the back of the animal. An acute swelling developed at this place, but there was no distinct abscess formation. The animal in the course of the next few days lost some flesh, but it continued to eat comparatively well until it was killed, ten days after the inoculation. There was a large subcutaneous swelling at the point of inoculation, which had extended from this in all directions, especially downwards on the side where the inoculation was made. The entire subcutaneous tissue of the abdomen was swollen and infiltrated with a dense fibrinous exudation. Here and there in this exudation were softer places from which a thick tenacious pus could be squeezed. The tissue in places was one cubic millimetre in thickness. The inguinal and axillary lymph-glands on the side of the inoculation were reddened and swollen. No bacteria were found, either in the purulent portions or in the fibrinous masses, neither on the direct examination of cover-slips nor in the cultures which were made, both from the seat of the inoculation and from all the internal organs.

This case is interesting on account of its unusual extension. Practically in all cases of acute fibrinous pneumonia there is a similar fibrinous exudation on the pleura covering the affected portion of the lung, to that in the lung itself. In most cases the fibrinous exudation is not confined to the pleura immediately over the affected portion of the lung, but extends from this over the entire surface. There will usually be found a similar condition on the costal pleura, but not so marked as on the visceral. An extension of the process into the chest walls and into the mediastinal tissues from the pleura is exceedingly rare.

In this case there is no question but that the process in the chest walls is one of direct extension from the pleura. The histological examination of the tissues here was of great interest. Apparently the first change which took place in the intercostal muscle, in the myocardium, and in the fat of the pericardium was a cellular proliferation of the interstitial tissue. The new formation of cells appeared to have taken place from the interstitial tissue, most probably from the cells of the capillary walls or from the lymph spaces. The newly-formed cells were of two sorts. There were large cells with an abundant protoplasm and a large brightly staining nucleus, and small cells similar to the lymphoid corpuscles of the blood, with a nucleus almost filling up the body of the cell. In this tissue there were no leucocytes nor fibrin. They appear to come later, and with the leucocytes and the fibrin the organisms were always found.

ACUTE INFECTION WITH THE DIPLOCOCCUS LANCEOLATUS IN A CHILD FIFTY-SIX HOURS OLD, THE INFECTION PROBABLY TAKING PLACE AT TIME OF DELIVERY.

I am indebted to Mr. J. R. Poor, of the Harvard Medical School, for the autopsy and for the history of his case.

The mother of the child was a primipara, belonging to the criminal class. Two months before delivery an abscess of the breast had developed, following on a sick. At the time of delivery this was completely healed, leaving a stellate cicatrix. The mother was a healthy young Irish woman. Since delivery the mother has done well, with the exception of a very slight rise of temperature on the third day, apparently due to a family row. There was no respiratory trouble whatever. The birth took place at noon, May 12th. The delivery was a somewhat slow one, necessitating the application of forceps. The child was slightly asphyxiated at time of birth. The respiration was rather slow, necessitating hot and cold applications. No trouble noticed in the child until the 14th, forty-eight hours after delivery: then it appeared to be rather dull and slightly cyanosed. It died suddenly at seven P. M., fifty-six hours after delivery. Before death vomited slightly.

Autopsy made twelve hours after death. Male child, large and well formed. Posterior to the right ear there is a large ecchymosis made by forceps. A very slight hæmorrhage in the dura, on the right side, corresponding to the external ecchymosis. The brain is normal. In the peritoneal cavity there is a small blood-clot. No adhesions. In the anterior mediastinum there is a slight amount of hæmorrhage, the thymus glands being especially infiltrated with blood. In each pleural cavity there is a slight amount of hæmorrhagic exudation. The pleural surface of the right lung over the lower lobe shows in places a fine fibrinous exudation. The entire lower lobe of the right lung completely consolidated. The lower portion of the upper lobe also consolidated. The pleural surface of the lung sprinkled with fine ecchymoses. The consolidated lung is of a dark-red color, looking somewhat like a hæmorrhagic infarction. On section it is dark red. The cut surface is dry and smooth. The granular appearance of an ordinary croupous pneumonia is absent, but the lung is not so smooth as it would be in a purulent or hæmorrhagic consolidation. The bronchi contained bloody mucus. The left lung shows almost the same condition as the right. Consolidation complete in the lower lobe and in a considerable portion of the upper. In the pericardial cavity there is a considerable quantity of slightly opaque serum. The visceral pericardium sprinkled with small hæmorrhages, which are also seen in the myocardium.

The valves of the heart normal. The ecchymoses are not only found in the pericardium, but extend from this into the muscular tissue of the heart, and especially into the intraventricular septum. In the trachea there is a quantity of blood-stained mucus. The pharynx and œsophagus are normal. In the stomach there is a considerable amount of dark blood. The liver large, rather pale, and on section there are numbers of opaque, slightly reddish foci of an average size of half a millimetre, which contrast sharply with the surrounding parenchyma. The spleen is large. On section homogeneous, rather soft. Neither Malpighian

bodies nor trabeculae are visible. No abnormal condition found in the other organs.

Cover-slips examined, made from the lungs, show enormous numbers of typical diplococci with well-defined capsules. Similar organisms were found in the blood from the heart, and in the scrapings from the other organs. Cultures made from the organs gave pure cultures of diplococci from the lungs, heart, blood, liver, spleen and kidneys.

A rabbit inoculated with scrapings from the consolidated lung died in three days of typical diplococcus septicæmia.

Examination of the consolidated portions of the lung showed an absence of typical appearance of fibrinous pneumonia. The consolidation was almost entirely due to hæmorrhage into the lung. In places there were small amounts of fibrin. Usually this was mingled with the red corpuscles, but in some places it was found in the alveoli almost alone. Here and there a few leucocytes were found along with the red corpuscles, but the numbers of these were exceedingly scanty. There was everywhere hyperæmia of the vessels, and as far as could be ascertained by the examination of the cross-sections of the larger vessels, there was no leucocytosis. In many portions of the lung the appearance resembled that of the foetal lung. The mucous membrane of the bronchi in these places was convoluted and the alveoli imperfectly expanded. Diplococci were everywhere present in enormous numbers. They were found not only in the hæmorrhagic exudation within the alveoli, but were also present in the alveolar walls and in the cross-sections of the larger blood-vessels. Fresh sections made of the various organs at the time of the autopsy showed no abnormal condition.

This case is of especial interest from the early age of the child, and the character of the infection produced by the diplococcus lanceolatus. In this case there was a general infection of the entire organism, similar to that which is usually produced in rabbits by inoculation with virulent cultures of the diplococcus. In spite of the early age of the child, it is not at all probable that the infection took place in utero. The mother was absolutely free from pneumonia or from any other pathological condition at the time of birth.

Welch has gone over carefully, in his paper on the diplococcus lanceolatus, all of the cases which have been reported of intra-uterine infection of the fœtus. In most of these cases death of the infant has taken place two to five days after birth; and although the infection was probably intra-uterine, the possibility of this having taken place during or after birth cannot be absolutely excluded. The most satisfactory of these cases is that reported by Birch-Hirschfeld. On the fourth day of a fibrinous pneumonia, the mother gave birth to a seven-months' still-born fœtus with intact membrane. There were hæmorrhages in the maternal and middle parts of the placenta. The only lesion noticed in the fœtus was ecchymosis in the pelvis of the kidney. Typical diplococci were found by culture in the liver, heart's blood, and umbilical vein.

It is well known that acute fibrinous pneumonia developing during pregnancy is likely to bring about miscarriage. This is the case not only in human beings, but in mice and rabbits which have been inoculated.

The character of the exudation in the lungs was also of interest. The exudation in the lungs was to a

large extent hæmorrhagic in character, and the condition most resembling that produced by the organisms in the adult was the fibrinous exudation on the pleura. There can be little doubt from the extent of the lesions in the lung that the organisms had entered the lungs first, and probably at the time of birth. The artificial respiration carried on may have been responsible for the entry of the organisms into the lungs.

The two cases also show a marked contrast, not only in the character of the lesions in the human cases, but also in the character of the lesions produced in the animals. In the first case there was a marked tendency to a local extension of the organism, with the production of a typical fibrinous exudation wherever it was found. The same thing was seen in the rabbit which was inoculated with the exudation.

These varying effects which are produced by inoculation with the diplococcus lanceolatus are probably to be referred to especial differences in the action of the organisms, and not to a mere difference in the degree of virulence. Cultures of the pneumococcus are sometimes met with which will always produce in every generation the same definite lesions.

CASES OF APPENDICITIS PRESENTING UNUSUAL FEATURES.¹

BY MAURICE H. RICHARDSON, M.D.

ACUTE CASES.

THE following unusual cases of appendicitis have been selected from those under my care in the past four weeks. They are reported in detail because each presents some variation from the ordinary case, and because in the existing uncertainties as to etiology, pathology and treatment, every observer owes to workers elsewhere a faithful report of his cases, whether successful or unsuccessful. There are many points of interest in regard to which these cases are too recent for deductions of value; in certain other respects, however, they justify definite conclusions.

I. Fulminating peritonitis: removal of gangrenous but unperforated appendix on second day; death. (Specimen.)

In a recent paper on appendicitis² I stated that in all severe acute cases with marked general and local symptoms, every appendix which I had removed was found to be perforated; and that in my belief the first symptoms depended upon such perforation. This opinion, though based upon a careful observation of many cases, is open to the criticism of being too strongly expressed. I hasten to report, therefore, an exception to this statement—a fatal fulminating case in which no perforation could be found on the most careful examination. The following are extracts from short-hand notes:

"Benjamin J. S., aged thirty-eight, single, East Boston. Dr. O'Keefe. Thursday, December 21, 1893. The previous health has been good. He was ruptured ten years ago. He has already had five attacks similar to the present. The last one occurred a year ago, keeping him from his business four or five days. Night before last he first began to feel a little pain in the bowels. Nevertheless, yesterday he was up and about

till towards night. The symptoms had by that time increased so much that he had to go to bed, where he passed a restless and sleepless night. There was no vomiting. This morning he had a chill. All this afternoon the pain has been persistently located in the right flank, and has been growing worse. He fixed the seat of pain at first in the centre of the abdomen (indicating the median line just above the pubes). This morning it was half-way between the umbilicus and the anterior superior spine of the ileum. The pulse this morning was 80; the skin cool. He has vomited two or three times to-day. He has passed some gas, but not much.

"*Physical Examination.*—He is in a state of moderate shock. The general appearance is bad; he lies in bed restless and groaning. The pulse is 112, weak; the temperature 100°. The extremities are cool. The very rigid abdomen is dull over the bladder; elsewhere resonant. There is general tenderness, with constant eructations of gas. By the stethoscope no intestinal sounds can be heard. Though assured that the case is practically hopeless, his friends wish him to go to the hospital."

I sent an ambulance immediately, and an operation was performed by Dr. Newell in about two hours from this time. A thick and short appendix was removed, the tip of which was gangrenous. There was free fluid in the abdominal cavity. The intestines were congested and paralyzed. The appendix was tied and removed; the abdomen irrigated. No cultures were made. The patient gradually sank, and died at one o'clock Saturday morning.

The general condition of collapse, the rigid and distended abdomen, made the prognosis in this case nearly hopeless. I had predicted confidently a gangrenous and perforated appendix, with general infection. The general infection and gangrenous appendix were found, but no microscopic or macroscopic perforation could be detected. Though no cultures were taken, there is little doubt that an escape of micro-organisms from the appendix had taken place through the patch of gangrenous tissue. The absence of perforation in this instance is the feature which I wish to emphasize. I had never met with just this condition of the appendix before. It would seem that in general infection perforation does not necessarily exist. Not that this observation detracts in any way from the importance of the early interference in cases of this kind. Whatever the pathological condition of the appendix may be, the escape of its micro-organisms into the peritoneal cavity, whether through a large opening or through a small one, or by gradual march through the lymph spaces, places the patient in the utmost jeopardy. Excision of the organ, with drainage and irrigation, should be performed at the earliest possible moment in every such case.

II. Appendicitis of three weeks' duration; large abscess in pelvis; complete intestinal obstruction; fecal vomiting; operation; relief of obstruction; death in six hours.

This patient presented the unusual complication of acute obstruction. There was no doubt upon this point, for the intestinal contractions, seen through the thin abdominal walls, were accompanied by loud borborygmi and intense pain. The patient was very much reduced in strength, and was already regurgitating the contents of the upper bowel.

"George T. B., aged twenty-one, South Hanover,

¹ Read by title before the Boston Society for Medical Improvement, January 8, 1894.

² American Journal of Medical Sciences, January, 1894.

Mass. Friday, December 22, 1893. Drs. Charles and McMillan.

"About four weeks ago he had a slight attack of appendicitis, with localized pain and tenderness. He described his pain as 'across his bowels.' Later, it was in the right iliac region. The pain subsided, and he began to improve, so that he got up and went about the house. Then the pain came on again. After two or three days he got better, and was not seen by Dr. Charles till last Monday. On that day he said that he had the pain only once in a while. In the beginning there was a temperature of 101°. Last Friday he had an attack like gastralgia, with pain in the epigastric region. This soon subsided, and has not been a prominent symptom since. There have been no chills. He gave a history of two previous attacks. The first one lasted but one day. The pain at that time was in the same place, 'across the bowels,' 'across the pit of the stomach.' Repeated questioning as to the locality of the pain elicited the same answer; 'right across the bowels.' The vomiting began last Saturday afternoon, and has continued ever since.

"*Physical Examination.*—Pulse 116, temperature normal. At times during the examination he complained of violent colic. Accompanying the pain, spasmodic intestinal contractions could be seen through the thin abdominal wall. Rectal examination showed a large tumor pressing on the bladder and apparently filling the whole pelvis. In this tumor irregularities in consistency could be felt, so that the question of draining by rectum was considered. The existence of acute obstruction decided me to select the incision through the median line.

"*Operation.*—A median cut was made between the umbilicus and the pubes. An acute obstruction of the bowels was found, caused by an omental band. The small intestine above the obstruction was dark-red in color and excessively distended. Deep in the pelvis filled with foul pus, was a large abscess cavity, the adhesions of which were separated with great difficulty. After cutting the band the cavity of the pelvis was washed out with peroxide of hydrogen, packed with gauze, and drained by means of a rubber tube. The operation was very rapid, not lasting more than twenty minutes. The patient died on the following morning."

This case is very similar to that of Mrs. C. F. A., reported last year,* in which recovery was due undoubtedly to a spontaneous opening in the cœcum through the stump of the appendix. In the present instance the coils of small intestine were bound down in the pelvis, and were relieved with great difficulty. There was no apparent hypertrophy of the intestinal wall, though its lumen was dilated and its peritoneum darkly congested.

The question of relieving the obstruction by opening the gut is interesting in these conditions. There is reason for supposing that such relief would have been attended by less risk than the methods used; yet the chief trouble would have remained untouched by a simple enterotomy. Moreover, the opening must have been made in the small intestine, possibly so high up as to interfere with nutrition. It seemed better, therefore, after thorough exploration, to remove at once the cause of obstruction. The immediate cause of death was the shock caused by manipulations upon the abscess, though they were extremely brief. The contents of the abscess cavity soiled the adjacent coils

of intestine. They were immediately disinfected as thoroughly as possible by means of peroxide of hydrogen. Even if the bowel had been opened after separating the adhesions about the appendix, it is not likely that recovery would have followed. A rapid enterotomy alone might possibly have tided the patient over the crisis until strength enough could be stored to enable him to undergo even the slight manipulations of drainage.

III. Appendicitis; apparent general peritoneal infection; mechanical obstruction; removal of perforated and gangrenous appendix; drainage; recovery. Peritoneal exudate sterile; colon bacillus in appendix. Recurrence of obstruction in four weeks. (Specimen.)

This case is the only one in my experience in which I have demonstrated satisfactorily an acute mechanical obstruction in the first days of an appendicitis. That the obstruction would have continued cannot be asserted; yet it was sufficient to cause unmistakable fecal vomiting, and was immediately relieved by separating the adhesions by which the small intestine was glued into the vesico-rectal fold by inflammatory adhesions.

"Binney, L. H., twenty-four years old, cabinet-maker. Thursday, December 28, 1893. Dr. Stevens of Cambridge.

"Last Sunday afternoon he first had pain in the belly, which he tried to relieve by walking. He walked around for a long time without relief. The pain continued two days. Wednesday morning it became intense and Dr. Stevens was called.

"*Dr. Stevens.*—'When I came he had a great deal of pain in the abdomen, a pulse of 72, and a temperature of 99°. His hands and feet were cold. His abdomen was flat, retracted, rigid, and tender; more tender on the right than on the left, from the pubes round to the right side. It acted like a perforation of the appendix. He was in a state of collapse, and it did not seem wise to interfere until he should rally. At five o'clock that afternoon he had rallied. Temperature 103°, pulse 110. He was pretty free from pain. At eleven o'clock, Wednesday night the temperature was 101°, pulse under 100. No vomiting. On Sunday night he had a chill. There was a little nausea, but no vomiting. On Monday he took a cathartic. This (Thursday) morning the temperature was 100° and the pulse 76. There was no vomiting. He could not pass his urine. The abdomen was slightly tympanitic. The muscles were extremely rigid, especially on the right side; and he had a pretty sick look. He has gone on through the day in about the same condition. At the present time (8.45 P. M.) he is in great pain. He has never had anything like this before.'

"*Patient's Statement.*—'I was taken Sunday about four o'clock. It was a good deal like a stomach-ache, and yet it was not. The pain was right across my stomach and my bowels, here (indicating the region of the bladder). The pain now is in the same place as at first. The attack was preceded by a diarrhoea following the use of rhubarb.'

"*Physical Examination.*—Pulse 72 to 80, temperature 99.8°. Complains much and groans constantly. Very tender on both sides in the lower part of the abdomen. There is some general tenderness without rigidity. No tumor; no dulness. Rectal examination negative.

"Friday, December 29, 1893, 10.20 A. M. Pulse 70, temperature normal. The abdomen is distended,

* Ten Days of Appendicitis, Boston Medical and Surgical Journal.

and tender in the lower portion, where he complains also of pain. No sounds can be heard by stethoscope. The vomiting is distinctly fecal in odor and color."

Dr. Taylor, of Cambridge, was present at this examination; also Dr. C. A. Porter, of Boston. It was a question, first, of appendicitis; secondly, of a general peritoneal infection; and, finally, of an acute obstruction. It seemed to me most like an acute intestinal obstruction. A grave prognosis was given.

An incision several inches in length was made in the right linea semilunaris. On nicking the peritoneum slightly cloudy serum escaped, from which a culture was immediately taken. The cœcum was found collapsed: the last three inches of the ileum were empty and flattened. The small intestines presenting were very much distended. The peritoneum was nearly normal, but slightly injected. The free fluid in the peritoneal cavity was removed as well as possible by means of dry sterile gauze. Adhesions could be felt about the appendix, which was situated in the pelvis between the rectum and the bladder. Gauze barriers were suitably placed to protect the general cavity of the abdomen before separating the adhesions, about which a small amount of fecal pus was found. The parts about the abscess were irrigated freely with peroxide of hydrogen. The lowest segment of the ileum was caught at a sharp angle deep in the pelvis among the adhesions about the appendix. Above this angle there was great distention; below, collapse. After the adhesions had been separated and this portion of the bowel delivered, gas at once filled and distended the cœcum.

The recovery of the patient seemed very doubtful; yet he rallied, and is now well. Vomiting continued two or three days, and was treated by absolute rest to the stomach and intestines, neither food nor cathartics being given. At the end of three days the bowels began to move, the vomiting ceased, and the patient became convalescent.

It has been said in reference to this case, that the obstructions described frequently exist in acute general peritonitis. A general infection was thought to be present at the time, though the appearances did not indicate a general peritonitis. Moreover, it must have been an inflammation independent of micro-organisms, or, at least, of those which grow upon the medium of blood-serum, for to this day the tube inoculated from the fluids free in the abdominal cavity remains sterile, though from the appendix itself abundant growths of a large, thick bacillus have developed. Furthermore, that the obstruction was not due to a paralysis of the intestine was shown by the existing borborygmi.

In this case the sterility of the free fluid is a fact of the greatest interest, and it explains the rapid recovery. In many instances a fluid apparently precisely similar has shown a rapidly growing microbe. In such cases death has invariably followed.

IV. Probable appendicitis at the age of seventy-eight; no operation; recovery.

The following case seems worth recording in detail, because it presents the typical history of appendicitis at a very advanced age.

"Andrew H., aged seventy-eight, North Hanover, Mass. Thursday, December 21, 1892. With Dr. McMillan.

"Night before last his trouble began with severe pain in the right side. He was cold and pallid. For many years he had been ruptured on both sides. There

was no indication of any strangulation or incarceration; there was no protrusion at the rings. The first symptom day before yesterday was vomiting, which lasted about ten minutes, and was followed by pain which ceased yesterday. He had two movements of the bowels from oil and enema. He never had anything like this before. The temperature last night was 103°; this morning it is 101°. The pulse was 104; now 90. His general appearance was good. There is tenderness in the right side of the abdomen, near the crest of the ileum, where there is also resistance and dullness. The temperature night before last was 103°. The right side was hard and tender." The condition of pyrexia in this case continued a few days. The symptoms gradually subsided, and the man is now well.

The history of this case is precisely like that of appendicitis with localized peritonitis. It is very unusual to see an appendicitis at this age. In one instance I have found, at the autopsy, in a woman of about seventy, a gangrenous and perforated appendix containing a gall-stone. If this man had been younger, or if there had been evidence of an abscess in the right iliac fossa, I should have advised interference. The patient was very much opposed to operation, preferring to die.

V. Appendicitis complicated by bronchitis; removal of appendix slightly affected; pneumonia; empyema; thoracotomy and excision of rib; recovery.

On Wednesday, June 7, 1893, I saw in East Boston, with Dr. Morrison, Fred A. R., aged six, who was taken sick the previous Saturday morning, complaining of pain in the side. (The father indicates the right lumbar region.) He had a good deal of pain, with some vomiting. He could keep nothing on his stomach. Sunday he was the same, complaining also of headache. On that day he was seen by a physician. Vomiting continued during Monday. Last night he was first seen by Dr. Morrison, who found him with a temperature of 104.5°. There was no symptom except this pain in the right iliac region, just between the umbilicus and the anterior spine. The left side of the abdomen was also tender. This morning he had rather more pain than last night, but there has been no vomiting since day before yesterday.

Physical Examination.—Pulse 120, respiration 40, temperature 102°. Though the abdomen was generally distended and tender, the tenderness was especially marked in the region of the appendix. There was no tumor; the tongue was clean. The thighs were flexed. The respiration was noisy and rattling; the cheeks were flushed; the eyes sunken. The general appearance was bad. There seemed very little doubt that this boy was suffering from an acute inflammation of the appendix, with perforation and a more or less general infection. The respiration of the left chest indicated trouble there, probably pneumonia. (This proved to be the case.) The surroundings of this child were so bad that we decided to send him to the hospital. The history and physical examination of this boy pointed clearly to appendicitis. On arrival at the hospital he was seen by Dr. Beach, who confirmed the diagnosis and opened the abdomen. The appendix was removed and found apparently normal. The child rapidly developed a pneumonia, from which he recovered. The abdominal wound healed firmly, and he soon became convalescent. This patient, in July, while under my care, developed an empyema on the right side, for which a rib was resected and drainage applied. The boy recovered rapidly from this op-

eration, gained very much in weight and strength, and was discharged from the hospital a picture of health, in spite of the fact that tubercle bacilli were found in the sputum.

I am informed by Dr. Beach that after removal of the appendix, on careful examination a condition of thickening and of catarrhal inflammation was found. That this condition of the appendix was not the cause of the acuteness of the symptoms, seems to me very certain, for the general pain and tenderness, with the rigidity of the abdomen and the flexion of the thighs, mean gangrene and perforation, or at least a septic extravasation, if any value at all can be placed upon this combination of signs.

Very similar to the last case is the following which I saw in consultation with Dr. Berlin on January 1, 1894. Had it not been for the experience gained in the above instance I should have said that this, too, was an acute inflammation of the appendix, complicating a pneumonia, and possibly I should have advised exploration. I certainly should have done so, had I adopted the rule to operate upon every case of appendicitis as soon as the diagnosis was made.

VI. Pneumonia apparently complicated by appendicitis; no operation; recovery.

Malcolm E., aged four, January 1, 1894.

"Always delicate. Two years ago had whooping-cough, after which he went South for the winter. Last Thursday, the 20th, he said he had a stomach-ache. The abdomen was flat. The only symptom was pain. At one time he would complain of the right side, and at another of the left. The symptoms were not alarming. The temperature was 101°, the bowels free. On Friday, there was evidence of trouble in one of the lungs, thought to be pneumonia. There was no local abdominal tenderness. On Saturday the temperature reached 105°, and he said his stomach hurt him. He complains of a good deal of pain in the abdomen (indicating the epigastrium). This morning he locates the pain in the right side all the time."

The cheeks were red and the respiration was rapid, though not labored. The abdomen was somewhat prominent, but not rigid. Intestinal sounds could be heard with the stethoscope. There was no dulness. Pulse 120, temperature 102.2°. Tenderness more or less general.

The complaints of this child, with the physical signs, obscure though they were, would have been strongly suggestive of an acute appendicitis, had it not been for the experience gained in the preceding case. The evidence in this case, however, is much less indicative of an appendicular trouble than that in the former. In children and young males persistent pain in the abdomen, of whatever nature, even if far removed from the usual seat of the appendix, is usually dependent upon an inflammation of that organ. The errors to which we are liable are not in the direction of early interference or mistaken diagnosis; they depend rather upon our overlooking the lesion and delaying its appropriate treatment. For one instance in which the interference has been useless or too hasty, I could point out a large number in which failure to appreciate early the gravity of the case has been followed by a fatal termination.

Abdominal symptoms occurring in the course of acute thoracic diseases are not unknown. Dr. Russell Sturgis writes me in regard to this as follows: "I have several times been able to confirm the observa-

tions of Dr. Eustace Smith, made in 1876, that the pain of pleurisy in children is frequently referred to the belly, and I have noticed abdominal pains as not of infrequent occurrence in the pneumonias of children. Dr. Smith thinks that the reference of pain to the belly is due to implication of the lower intercostal nerves, the ends of which ramify in the abdominal walls."

In addition to the above cases, I have seen several others which do not differ from the usual type enough to justify their insertion under the title of this paper. In one, the fatal extravasation of fecal matter was the direct result of salines. In another, the onset of the disease was ominous, but rapid recovery followed. The third was saved from a general peritonitis by early drainage. A fourth called the physician on the seventh day for the first time. Nothing could be done for the child, who survived only twelve hours. A fifth was doing very well under medical treatment, when he became collapsed, and died twenty-four hours after an emergency operation by another surgeon. A sixth presented the features of the severest type of intra-abdominal disease not pointing especially to the appendix. Nothing tangible could be made out. Operation was not advised, because no definite indications could be found to guide incision. A day later all unfavorable signs had disappeared. A seventh case is recovering after drainage. In an eighth an appendix was found in violent paroxysmal contractions upon several fecal concretions. The appendix was removed, its stump covered with peritoneum, and the wound in the abdominal wall tightly closed. The results are on the whole encouraging. Surgical interference, however, must be insisted on in the initial stages of this disease rather than when the patient is hopelessly infected.

RECURRING CASES.

The following cases of appendicitis, in which the appendix was removed during the period of abeyance, present one or two conditions hard to explain, and give rise to doubts, first, as to the probable dependence of the symptoms upon the lesion found, and, secondly, as to the advisability of surgical interference.

I. Removal of thickened and adherent appendix in period of abeyance; rapid recovery; subsequent attack like those previous to operation. (Specimen.)

William T. G., aged twenty-four. I saw this young man on January 30, 1893, at Dr. Hildreth's house in Cambridge. I give in detail the history of this attack, in order to make a comparison with that occurring in December following removal of the appendix.

"Monday, January 30th. Yesterday he felt faint in church. In the afternoon he stayed at home on the lounge, and in the evening came to Cambridge. Was pretty sick in his room that night, suffering from pain through his stomach and bowels. This morning he has vomited. He had a pulse of 90, and a temperature of 99.3°. During the night he vomited two or three times, but did not seem to get much relief from it. The abdomen was flat. The pain was exactly in the region of the appendix, where there was a good deal of tenderness, but no tumor. He has had pain in the region of the appendix before, while playing tennis, but never so severe.

"*Physical Examination.* — Temperature 99.2°, pulse 80. Tenderness over the appendix, without dulness. Rectal examination negative. No operation advised.

"February 7th, Dr. Hildreth wrote that soon after my visit a small bunch appeared in the region of the appendix, which gradually subsided. He has been on the whole in very good condition ever since.

"October 18, 1893, Mr. G. said: 'I have had considerable pain since. In June I had an attack which laid me up two weeks. There was not much fever.' October 20th, he said: 'I am very well now, though at times I have a little pain. Since the attack in January I have had in all about five weeks' disability.'"

Operation at the Massachusetts General Hospital, October, 1893. A small incision was made parallel with the fibres of the external oblique muscle, beginning in the right linea semilunaris over the usual seat of the appendix. The cœcum and the parts about the appendix were much congested. The enlarged and thickened appendix was cut off close to the cœcum. The stump was covered in by peritoneum with interrupted silk stitches. A rapid convalescence followed. He was kept on his back four weeks, to allow the scar tissue to get perfectly firm.

On Tuesday, December 18th, I made an examination. He said that on the preceding Thursday morning he had had the same dull pain in the stomach as before, which grew worse and worse. At first he thought he could bear the pain; but it became so severe that he finally went to the doctor, who sent him to bed. The pain lasted till Friday morning, when it left him quite weak. He did not eat anything until Saturday, for he had no appetite. At first the tenderness was general, but afterwards it seemed to be in the same spot as before. It pained him to lie on that side, or to make any motion from one side to the other. The scar was firm, and there was no tendency to hernia. There was no local tenderness.

When the appendix was removed at the hospital, in October, it was very much thickened. Its peritoneal covering was brilliantly injected, and everywhere attached by old adhesions filled with blood-vessels. The mucous surface was dark, rough and reduplicated. The cavity was filled with thin, muddy fluid of dark color. There was no concretion found.

The attack following the operation differed in no respect from those which preceded it. Had the appendix presented normal, or even substantially normal, features, it might be said that there had been an error in diagnosis, and that the attacks were dependent upon other conditions.

Had enough of the organ been left, we might ascribe the late attack to an appendicular colic or a very limited inflammation; but the silk was applied close to the cœcum. The symptoms, therefore, demand some other explanation. The most reasonable one is that the cœcum shared in the appendicular inflammation, and had not recovered its normal condition. On the other hand, the trouble may have been an acute indigestion similar to the previous attack, but of entirely different origin. The pathological condition found exceeds, in the apparent variation from the normal, all lesions I have been able to observe in this class of cases. As far as one can judge, this appendix invited disaster both by the character of its contents, and by its evident condition of chronic inflammation.

The two following cases are reported not only for their intrinsic interest, but because the condition of the appendices found does not seem sufficient to account for the symptoms for which they were removed.

II. Appendicitis; abscess; drainage; recovery;

ten months later an attack like the former, without abscess; removal of appendix which had become almost entirely obliterated; recovery. (Specimen.)

Andrew M. B., aged thirty-eight, shoe-fitter, of Lynn. Drs. Marshall and Lovejoy. Sunday, February 19, 1893.

"I am subject to constipation. When first taken I felt as if some one had hit me in the stomach. After that I had terrible pain. This was a week ago last Tuesday. I vomited several times and have vomited since." There was a rise of temperature for two or three days after the first symptom, the highest being 102°. He had no physician at first and treated himself for colic. He seemed to be doing well. About a year ago he had had a similar attack, which was a very slight one, comparatively. On examination I found a very large tumor in the lower part of the abdomen. The general condition was good. There were no urgent symptoms. Drs. Marshall, Lovejoy, Colman, Little and Harmon were present at the operation. A large incision was made over that part of the tumor presenting in the right iliac fossa. About four ounces of pus of fœcal odor were evacuated through the first incision. The adhesions toward the left were separated with difficulty, and much pus was evacuated from that side. The appendix could be seen in the depths of the wound, large, thick and gangrenous, but so intimately adherent to the surrounding parts that it seemed inadvisable to make any very prolonged efforts for its release. The wound was drained by means of rubber tubes, one deep in the pelvis and another towards the bladder. The whole was packed loosely with sterile gauze.

About two weeks after this there was a discharge of a pint of pus from the wound. The temperature dropped at once to normal. Later it went up to 103°, where it stayed for a week. Nothing could be felt in the abdomen except impacted fœces.

He recovered entirely, and remained well until November, 1893. On November 21st, he came to me and said that "three weeks before he had had a sick spell, coming on like the previous attacks." He had pain in the pit of the stomach; "not a real sharp pain, but a dull sort of pain." With this attack he had a very little fever. In other respects he was well. The pain seemed to go down from the epigastrium to the right iliac fossa, as it did in the attack in February. In answer to the question "How did the last attack begin?" he said: "Well, it is hard to explain. It began with this dull, soft pain in my stomach [indicating the epigastrium.] It kept going down, so that it was a real sharp pain—a stoppage-like pain. Then the trouble would go down to where I was cut. With the last attack there was no vomiting. When I was taken I felt sort of squeamish. It seemed as though I ought to vomit. I have had no other attack since the operation, except that I felt a pain or soreness in my side."

I found a hernia in the scar. There were no other symptoms. I advised first an operation on the hernia, and then, should there be reason for it, an excision of the appendix.

On cutting into the abdomen I found the parts about the cœcum glued together by adhesions, which were easily dissected. The remains of the appendix were found adherent to the outer and lower border of the cœcum. The tip was separated from the base of the appendix by an interval of an inch and a half made up of connective-tissue. I dissected off the tip of the ap-

pendix, and cut the stump close to the cœcum. The abdominal wound was closed immediately by interrupted sutures. A very gratifying convalescence followed. He was sent home at the end of three weeks.

III. Recurring appendicitis; removal of remains of extra-peritoneal and adherent appendix. (Specimen.

Joseph H. M., aged twenty-nine, Washington, D. C., January 1, 1894. This patient has always been in good health up to the time of the present illness. About four years ago he had an attack of indigestion, as the physician in New York thought. There was severe pain through the lower part of the abdomen (indicating a spot a little to the right of the median line, between the umbilicus and the pubes.) This pain lasted about a week, accompanied by slight fever. The pain was intense, followed by vomiting. He recovered from this very well. He was not conscious of a bunch in the side at any time. The next attack was about a year after that, and resembled closely the first. The pain was in the same place, was very acute, and lasted about the same length of time. The next one was six months after the second, and was very similar. About six months ago he was taken, after getting tired, with what was again supposed to be indigestion. This was accompanied by pain in the same place. The muscles over this part of the abdomen were rigid and hard. "I was all drawn up, and it was about a week before I could stand up straight. The whole effect of this attack lasted about three weeks." About the middle of November he had another attack, with which there was some fever. The physician discovered a swelling in the right side at that time. "I have lost about three weeks in the last year. Between the attacks I have a great deal of soreness in the same spot."

I found the patient rather pale and spare. In the right iliac fossa there was a tumor about the size of the finger, hard, somewhat irregular, and only slightly movable. This tumor was situated apparently at the outer border of the cœcum, and behind. Its irregularity and hardness suggested malignant disease. The diagnosis of appendicitis was made, and an operation was advised. This operation was performed on January 8, 1894. The parts about the cœcum were extensively infiltrated by an inflammatory mass, in the centre of which the remains of the appendix were found. This mass lined the right iliac fossa and extended under the caput cœci to the brim of the pelvis. The adhesions could be separated only with the knife. The rounded end of the appendix was adherent to the cœcum, its outer border about at a level with the anterior superior spine of the ileum; the base of the appendix was in its usual position at the brim; between the two there was nothing but cicatricial tissue; the whole intervening portion had been obliterated. I removed the tip and the stump of the appendix close to the cœcum. Its lumen was so large that it seemed best not to close the wound at once. The patient has made, thus far (January 17th), very satisfactory progress, and will undoubtedly recover.

The appendices removed in the two last cases show, as you will see, very similar gross appearances. The chief difference is in the size of the remaining fragments. In both, the central portion has disappeared, and its place has been taken by connective-tissue. In each instance the tip is smooth, rounded, and firm. The peritoneum is injected. Internally the mucous surface is velvety and reduplicated. The closed cavity

of the tip contained a thin fluid. In Case III no cultures could be obtained on agar-agar.

In Case II ten months have elapsed since the first operation. The micro-organisms have been imprisoned in the cavity of the tip long enough to deprive them of their virulence and activity, though this is not a fact resting upon any bacteriological investigations of the case. The wound was closed immediately in Case II because the appendix was opened only at the base, and extravasation was prevented by covering the stump with peritoneum.

In Case III the opening was so large in the appendix, and the chances of contamination so great, that I packed the parts with gauze and left the wound partly open. The harmlessness of the contents, as shown by sterility of the cultures, proves that this precaution was unnecessary. Drainage is all the more to be regretted because of the increased liability to hernia.

Case II is interesting also because of the trivial remains found after one of the most extensive abscesses in my whole experience. Nothing could be found except a slight induration behind the cœcum, and the contiguous cicatricial tissue in which the appendix was found embedded.

In Case III, on the other hand, in which there was either absorption of the abscess or rupture into the bowel, there was an extensive induration which involved the whole right iliac fossa.

Whether these operations, viewed solely in the light of the condition found, were justified or not may be a matter of opinion. The appendices can certainly do no harm now. From all the evidence to be obtained beforehand, the operative interference was well justified. Indeed, if we remove every appendix which is probably or even possibly diseased, we shall save many lives and prevent much suffering, even if we occasionally perform an unnecessary, though safe, operation.

TWO CASES OF CHANCRE OF THE EYELID, WITH AN ACCOUNT OF THE MANNER OF INFECTION.¹

BY MYLES STANDISH, M.D.

Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Ophthalmic Surgeon, Carney Hospital; Assistant in Ophthalmology, Harvard Medical School.

CASES of chancre of the eyelid are not unknown. There are some thirty cases in medical literature; but there is every probability that the very rarity of the affection has caused other cases to be overlooked in the haste of large ophthalmic clinics, as the infection, in a large proportion of cases, takes place at the margin of the lower canaliculus, and the amount of swelling which accompanies the lesion is very great, so that as a result the gross appearances counterfeit an ordinary lachrymal abscess so exactly as to easily lead to a mistaken diagnosis.

The two cases I am about to report are of interest from the fact that in each the manner of infection of an innocent person was distinctly traced, and are therefore, of importance from a prophylactic point of view.

The first case was brought to the out-patient department of the Carney Hospital by Dr. F. W. Stuart, with the following history:

H. K., a man thirty-one years of age, married, had first noticed a swelling at the inner angle of the lower

¹ Read before the Boston Society for Medical Improvement, January 8, 1894.

lid of the right eye ten days before, attributed by him to a poisoning of the lid from a splash of green paint which he had received in the right eye a day or two before the swelling was discovered. The gross appearance much resembled an active lachrymal abscess. There was a rather large, rounded swelling at the inner angle of the lower lid, red and slightly painful when touched. Upon examination there was discovered in the centre of the tumor a round infiltration, hard and surrounding the opening of the lower canaliculus; no abrasion of the skin or conjunctiva was discovered, but such a condition might have been easily overlooked as the amount of swelling was so great that the lid could not be everted in order to get a good view of the opening into the canaliculus. The patient had always been well and robust, and there was absolutely no venereal history. There was a history of considerable pain locally the past week. There was one small pre-auricular gland to be felt.

The patient was admitted to the hospital; and in the course of four or five days not only the pre-auricular glands swelled rapidly but the sub-maxillary glands on the right side became very rapidly enlarged so that in the course of five days there were three glands below the angle of the jaw as large as hen's eggs.

It is but fair to state that during this period he developed a pharyngitis and tonsillitis with a high temperature, and was so ill that he kept his bed.

As soon as the fever subsided, the patient becoming dissatisfied, left the hospital and returned to his home, and came again under the care of Dr. Stuart. Both in the hospital and immediately upon his return home, active mercurial treatment was maintained. The swollen glands diminished in size without suppuration.

The patient was next seen by me a little over two months later, when he came again for treatment. He then had an active syphilitic iritis in the right eye, the same eye upon the lid of which the initial lesion was situated. The pupil was small and its margin attached to the capsule of the lens throughout almost its entire circumference. Under the active use of atropine and hot fomentations, however, the synechiae were all pulled off, and I again lost sight of the patient; but Dr. Stuart informs me that subsequent to the iritis he had a characteristic secondary eruption appear.

Dr. Stuart was much interested in the case, and undertook an investigation as to the manner in which the original infection was acquired; and by his kind permission I am enabled to report his results.

The patient was, as I have said, a married man and lived with his wife in a small house in South Boston; the only other member of the household was a male boarder. Upon investigation this boarder was found to be suffering at the time of the original infection from a secondary syphilitic eruption. The two men occupied different rooms, and only used one article in common, namely, a roller-towel over the sink in the kitchen. It was their habit upon coming in from their work at noon and night to go to this sink, turn on the water at the faucet and wash their hands and faces in the running water, and then to use the before-mentioned roller-towel to dry their hands and faces. There is no doubt but the disease was transferred from one man to the other by the means of this towel.

The subsequent history of this family is also interesting.

The patient was warned repeatedly, both by Dr. Stuart and myself, as to the danger of infecting his

wife; nevertheless, during the secondary stage he did infect his wife. The initial lesion was upon the vulva. At the time of the infection the wife was four-and-a-half months pregnant, and subsequently, at full term, she gave birth to a syphilitic child, which died a few weeks after birth.

The second case which I have to report came also to the out-patient department of the Carney Hospital about four months before Dr. Stuart brought his case there. He was a man twenty-five years of age, unmarried, and a brakeman upon a freight-train on a railroad leading out of Boston. He reported that about two weeks before—he could not fix the exact date—he had gotten a hot cinder in his eye, since which time it had given him more or less trouble. Upon examination, the lower lid was seen to be considerably swollen and reddened; and when the lid was everted, an ulcer, a centimetre long and about half as broad, was found in the conjunctiva of the lower conjunctival sac. This ulcer had sharp edges, a grayish, dirty-looking base, covered with a somewhat viscid, yellowish discharge. The base of the ulcer could be felt through the lower lid to be a dense, firm induration. The pre-auricular glands were found to be hard and about the size of cherry-stones.

A diagnosis of an initial syphilitic lesion was made, and he was given an ointment of the red iodide to put into the eye; and a pill of hydrarg.-protiodid. (gr. $\frac{1}{4}$, t. i. d.) was prescribed. The appearance of the ulcer was such, however, that I did not feel absolutely sure but what it might be tubercular.

The patient was well and strong, and there was no tubercular or syphilitic history to be obtained. Dr. J. J. Thomas was kind enough to make an examination of the material obtained from the base of the ulcer, for tubercle bacilli. None were found. A week later I removed a portion of the tissue itself from the margin of the ulcer. Dr. Thomas examined this also, and reported that after a very careful search he was satisfied that there were no tubercle bacilli in the specimen.

In the course of a week's time from the first visit, the pre-auricular glands became much enlarged, and soft to the touch. Having satisfied myself that the diagnosis was correct, I questioned the man to see if I could determine the source of the infection. I found that our patient was a brakeman upon a local freight-train, the crew of which consisted of two other men and himself; that they occupied more or less a small car carried on every freight-train for the convenience of the crew, called a "caboose"; that in this they changed their clothes and washed up when they were through their work; but that they did not sleep in the car. Upon inquiry, I ascertained that the other brakeman on the train had had of late some kind of an eruption upon his face, which from the described appearance, duration and an acknowledged history of a recent initial lesion was in all probability an eruption of secondary syphilis. All the men upon the train used the same towel upon "washing up" when their work was over.

The patient was a very unreasonable man, hard to manage; and when my diagnosis was finally told him, took offence and ceased to attend the clinic.

I saw him, however, quite by accident, several months after he ceased to come to the hospital; and there was no doubt in my mind but what he then had an eruption of secondary syphilis.

The method of infection in these two cases is, to my mind, of great interest. It is evident that in roughly drying the face the delicate conjunctival surface at the edge of the lids could be easily abraded, as no matter how carelessly a towel is used, every one is sure to dry about the eyes when the face is dripping wet, to prevent water entering the eyes upon opening them.

It seems to me to follow, as corollary, that, if a chancre of the lid can be acquired in this manner, that a chancre of the lips or edge of the nostril could be acquired in the same manner. The moral is evident: A public towel is an abomination, and should be abolished from all workshops, railroad toilet-rooms, and other public places.

ON SPERMATORRHOEA AND INCIPIENT HYPERTROPHY OF THE PROSTATE, AND A PROPOSED METHOD FOR ITS TREATMENT.

BY RICH. HOGNER, M.D., BOSTON.

A LONG time is always necessary to collect facts; and as it is better, moreover, that they be collected from widely-spread sources, I have not hesitated to communicate the few cases noted below (interesting in themselves, but still more through the great groups of diseases to which they belong), in the hope that more attention may be drawn to prostatitis, especially to that form I have found in spermatorrhœa, and to incipient hypertrophy of the prostate.

During the past summer six or seven youths, between the ages of nineteen to twenty-eight years, came at very nearly the same time under treatment for spermatorrhœa, — *post masturbationem*. All had been previously treated by the "usual methods," but without improvement. The "usual methods" were pursued also by me with physical and psychical improvement in view, besides exercises in the open air, bathing, encouragement, sedatives, cold-water spinal douche, etc.; moreover, *sond à demeure*; but all in vain.

The cases were in many respects alike but also in some points very unlike.

Concerning the usual symptoms it may be mentioned that the frequency of the ejaculations varied between two or three and ten or twelve a week. The conditions of the prostate were the most interesting part in these cases. Its amount varied considerably, from being increased so that the apex could not be approached with the finger, to being rather diminished so that it was palpable everywhere with a very slight movement of the finger; and the consistency was in the former case more or less fleshy (sometimes giving the impression of swelling around a firmer part); in the latter, more hard, without any swelling at all. The former groups (four or five cases) belonged, as to duration and symptoms, to the milder ones; the latter to those of longer continuation and severity, where the ejaculation often occurred without feeling. In all the cases the prostate was found to have an increased sensitiveness or pain to the touch, either over the whole organ or over a portion of the same, in one case apparently only in the region where the lateral lobes begin to diverge, a pain which I have not yet found in uncomplicated cases of masturbation. The symptoms suggested chronic prostatitis in different stages, occupying most frequently the whole organ, and — with regard to the frequent ejaculations — in my opinion, especially the muscular elements. And why would this not be so? The prostate, an organ both muscular for ejaculations

and follicular for secretions, becomes during the spermatorrhœa more strained than under normal conditions. In spite of spermatorrhœa, the "patients" often continue with masturbation; and the prostate muscles, moreover, appear to remain (if I may use the expression) in a kind of "half-primed" state, or one of "constant expectation," and to be in a sickly, irritable condition, with the result that sometimes only the least influence is necessary to produce ejaculation. A hypertrophic gland is in a hyperæmic semi-inflammatory condition; and a muscle which is unnaturally strained often becomes the seat of inflammation. In the spermatorrhœas are found, therefore, the possibility for both a folliculitis and a myositis of the prostate, *per continuitatem* affecting each other. The discharge from prostatic follicles forms a part of the sperma just as certainly as the secretion from the vesiculi seminales; then why should not a follicular prostatitis be primary as well as a spermatocystitis? The prostate gland has surely a double function (secretive and ejaculatory), while, on the contrary, the vesiculi seminales have chiefly only one (secretive); therefore the prostate becomes strained proportionately in double measure during spermatorrhœa, while the vesiculi seminales are so only in one function. Therefore, it seems to me, that the prostate can be primarily diseased as well as the vesicles.

In his treatise Dr. J. Lloyd says²: "In the majority of cases where prostatitis is thought to complicate a urethritis it is the seminal vesicles which are the seat of the inflammation, and not the prostate at all."

When Dr. Lloyd thinks that the urethritis spreads through the ejaculatory ducts, why should it not be carried through the fifteen to twenty excretive follicular ducts which empty below on *pars prostatica urethræ*? I will not speak further on this subject, but maintain that with spermatorrhœa (which is here especially treated of) the prostate gland is just as directly affected as the other genital organs.

The intention is not to draw general conclusions from a few cases; the attempt has been rather to express my impressions and reasons why the prostate began to be treated with massage as in other cases of myositis; while nerve-pressure³ was given at the same time, and in some cases, moreover, gymnastic movements so applied as to lead the blood from the pelvic viscera.

Massage was given once or twice daily per rectum (while the patient was recumbent with elevated pelvis, at the same time placing his fists under the buttocks), partly while the sound (solid No. 10) lay within, partly after it was withdrawn, and continued as long as possible, that is, only a few minutes, as long as the physician can endure it. As a conductor during the massage the sound is of great value, because it makes the prostate more approachable and steady; moreover, it causes the massage to be so much more effective by reason of the double pressure, which is given by the finger per rectum and the instrument per urethram, a

¹ On Spermatocystitis (Inflammation of the seminal vesicles). By Jordan Lloyd, M.D., F.R.C.S. *Lancet*, October 31, 1891, pp. 97, 974, etc.

² *Loc. cit.*, pp. 975, 976.

³ With "nerve-pressure" is meant, a local pressure on a nerve (trunk, branch or plexus), given in such a way that the nerve is pressed for some seconds firmly between the tip of the finger and a more or less deep-lying bone, while at the same time the hand is made to tremble so that under the pressure of the finger the vibration is transferred to the nerve. The movement is intended to create a molecular irritation or change by means of which one seeks to transform the abnormal condition — as far as it can depend on a centropinal change — to a normal one.

pressure which becomes more local than that between the finger and ramus pubis, against which the organ otherwise is resting when the sound is removed.

The cases treated became so much better after two to three weeks that the subjects considered themselves well. The severest was an upholsterer, twenty-eight years old, who had tried "all kinds of remedies" for five or six years, but without success. The patient had a spermatorrhœa appearing each or every second night, and sometimes as many as three times in eight hours. The powers of body and mind were depressed; but the patient was able, however, to continue his work. The prostate was not swollen, but rather small and hard; but what impressed one most was its excessive tenderness, equally spread over the whole organ. Massage and nerve-pressure were employed once daily; also a promenade three-quarters of an hour long before and after each treatment. After two weeks the treatment was discontinued, because one ejaculation a week seemed to the patient to be "nothing." The general health had improved considerably. The tenderness in prostate had disappeared.

In comparison with these cases was one with incipient hypertrophy of the prostate, a man thirty-three years old, who had been married five years, who sought a consultation ostensibly for the reason that for two years past "it had dropped so long" after urination. No stone; no stricture. The urine was clear, passed perhaps more frequently than formerly. The bladder discharged its contents wholly; and still there was a desire soon after to urinate again, so that the patient did not feel comfortable before he had passed some drops more. The prostate gland, of exceedingly fleshy consistency, was considerably enlarged as a whole. The apex of the right lobe was especially difficult of approach by the finger. The lateral lobes felt knurly, especially the right one, in the upper part of which, moreover, a stringy mass of lobes was felt proceeding from the lower inner part to the upper forward part, and gave the impression of enlarged, perhaps somewhat dislocated vesiculi seminales; which mass of lobes as well as the prostate as a whole was noticeably tender to the touch. It took a long time to introduce the catheter; also it had to be inserted deeper than usual, and the posterior part of the urethra was excessively tender, bleeding easily. Gonorrhœa had never existed; neither spermatorrhœa; but the man had, nevertheless, masturbated.

Among formerly employed methods was used — but without success — electrolysis. The treatment now was with massage alone, with and without the sound, on the prostate gland twice daily (except Sundays).

After two months' time the patient's "dropping" disappeared, so that it was "nothing to speak of," and the prostate became diminished so much that it could almost be considered normal, was rather hard and not swelled at all. The knurly character of the left lobe had disappeared, and only a suspicion of unevenness remained in the right lobe. The stringy mass already mentioned had disappeared, and instead somewhat enlarged ordinary vesicles were felt above the right lobe of the prostate. The tenderness had also disappeared.

That especial importance was attached to making the sound, orificium urethræ and the fingers aseptic, scarcely need be mentioned.

Several years ago I had already tried to treat the diseases mentioned, with the use of the sound (then without massage), but no particular success was met.

The signal success resulting from last summer's experience may, therefore, be ascribed alone to the massage.

As stated, the changes of the prostate, in the cases of spermatorrhœa examined, have been regarded as a prostatitis and treated as such; and also the condition in the case of incipient hypertrophy of the prostate referred to, in which the prolonged dropping (a symptom common, moreover, to the senile prostatic hypertrophy), seems to me to indicate that the changes in the prostate even spread to the muscoli detrusor and sphincter vesicæ, both of which connect with the prostate muscles.

Therefore the case can rightly be considered as hypertrophia prostatæ *præ senilis* or incipiens, which was arrested by massage.

But if, instead, the prostatitis had continued, it is probable that the prostate would have become in time harder, and fibrously hypertrophied, that the urinary troubles would have increased, and that the subject would finally have had a regular hypertrophia prostatæ senilis.

The spermatorrhœa with its abnormally exaggerated secretion and ejaculation (probably from the beginning tropho-neurotic and neurotic, but afterwards just as much musculo-glandular in its pathogenesis), it seems to me that a serious circulus vitiosus is established; a nervous irritation has increased the secretion, and this, in turn, the ejaculations, that is, caused the muscular strata to be unnaturally primed or active, which has an influence on the innervation of the prostate, this on the secretion in the follicles and in the remaining genital organs, etc. To this is now added, moreover, the mental depression and the great loss of the specific "vital energy" of the sperma, which in turn also contributes to the diseased condition. Massage was destined in this case to break a link in such a chain.

If prostatitis has been found in spermatorrhœa, then one must imagine the stages preceding, developed by degrees through the masturbation, that is, stages of irritation which finally (through accidental injuries, taking cold, a hurt, etc., or most commonly through continued straining) merge into a regular inflammation. The condition can be the same after exaggerated, natural ejaculations and even so in the irritated condition of the prostate following gonorrhœa. In short, several causes, especially sexual ones, seem to be found, which very early call forth a condition of irritation in the prostate, which from one reason or another is easily transformed into prostatitis muscularis, which, moreover, as in other cases of myitis, etc., untreated, continue through life and increase by degrees; and herein, I consider lie, in great measure, the causes of the frequently occurring "hypertrophia prostatæ senilis," so much the more, as we can easily imagine here a new "circulus vitiosus." When the prostate has grown to a certain degree, it causes a hindrance to the passage of urine. The walls of the bladder become hypertrophied through a process in all respects like a myitis of exceedingly long duration. The affection of the muscles of the enlarged bladder extends also to the prostate muscles (these muscles being so closely connected), and so the hypertrophy of the prostate increases, also the difficulties of urination. That such a long-continued muscular prostatitis is transformed into hypertrophy and not into atrophy certainly depends on the great quantity of blood, physiologically located in the genital region.

W. White says⁴ that one must, from the theories concerning prostate hypertrophies, provisionally accept that of Velpeau (Thompson): "The growth or growths, which make up the enlargement in prostatic hypertrophy are analogous to those fibro-myomata so frequently found in the uterus." It seems to me, rather, they are analogous to metritis hypertrophicans. Either may be the case. But just as the fibro-myomata certainly have been preceded by an irritation, just as the metritis (partialis or universalis) which are treated with massage with the greatest success according to Thure Brandt's method, just so surely have we even seen an incipient hypertrophy or a prostatitis removed by massage. As metritis often depends on something connected with the sexual life (such as, for example, after colds or hurts, especially during, or immediately preceding or following menstruation, after partus, after infectious coitus, etc.), we have here also a similarity between the probable stages of both fibro-myomata or at least of metritis hypertrophicans and the hypertrophia prostatae senilis; the latter of which, for reasons mentioned, seems to stand in relation to the sexual life, an assumption which is further strengthened by the fact, that a bilateral castration diminishes the senile prostatic hypertrophy.

When White asks, "In what cases is a purely expectant treatment proper?" he answers, "Only in those in which enlargement has produced no symptoms, and catheterism is easy and shows no residual urine." I will answer, on the contrary, that every enlargement, every tenderness of the prostate should be treated, in the attempt to prevent hypertrophy, which the surgeon can so beautifully operate upon, but with uncertainty of cure.

It is unfortunately true that one seldom finds a person willing to be treated—at least for any length of time—for a sickness which has not appeared; but I believe, if my comprehension of the beginning of "old men's troubles" is the right one, both that it is the duty of the physician to warn the young or middle-aged man (who, moreover, has already noticed, perhaps, the dropping and prolonged urination) of what can follow if he lives; and that there will be many who would gladly undergo preventive treatment. If we find, even accidentally, during the examination, the prostate *in stadio irritationis* or *in statu mytico*, then the time has come to attempt a treatment.

At present I know no better treatment than massage; but if science finds a less laborious one, so much the better.

It is assumed that hypertrophia prostatae senilis must have its curable stages. May attention be called to this, and testimony from many directions throw light on all sides of this important subject!

A FRENCH CASE OF ILLEGAL PRACTICE.—A curious case of illegal practice is reported from the small town of Sarrao in France. A woman dying in advanced pregnancy, the priest, who was present during her last moments, persuaded a person who was at her deathbed to perform Cæsarean section, in order that he might baptize the child. The authorities, considering this practice to be illegal, proceeded against the operator, who was proved guilty of practising medicine without a qualification, and was fined three dollars.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

NEW REMEDIES IN DERMATOLOGY.

WE quote from a careful *résumé* of this subject by Dr. A. Strauss,¹ some of the more important items.

Europhen-Bayer.—Gottheil, of New York, saw the best results from the use of this drug in ointment form, in tertiary syphilitic ulcerations. Three cases were quickly healed, one was much improved. Brilliant results were also obtained in tinea versicolor, and in tinea circinata. No effect was produced on acne and folliculitis. Pruritus senilis, alopecia areata, and keratosis pilaris were improved, but no more than by other methods. It proved of value in cases of chronic eczema, of none in acute. Six out of seven cases of psoriasis showed as good results as after treatment by chrysarobin. The remedy was chiefly used in the form of a ten-per-cent. ointment, which proved unirritating and innocuous. An Italian observer has noted better results in venereal ulcers from europhen in powder than from iodoform, while he was less successful in syphilitic gummata. The absence of odor is emphasized, in comparison with iodoform.

Amylum Iodatum.—This has been recommended as an application in place of iodine, in the following ointment:

R Amyli iodati	3.0	
Lanolin	30.0	
Ol. Calami	gtts. iii	M.

Resorcinol.—An amorphous, brown powder, smelling of iodine, compounded of resorcin and iodoform. Dr. Bielajew saw good results from this powder in chancres, ulcers of the legs, scabies, psoriasis, eczema, lichen, and in badly healing wounds. It has a very favorable action on pruritus, but must be used in its purity only in gangrenous, or very torpid ulcers.

R Resorcinol	5.0	
Talcum ven.	20.0	M.

Hydrargyrum Resorcino Aceticum.—A dark-yellow, crystalline powder, insoluble in water and mineral oils. It was used by Ulmann in the form of injections for syphilis, and was found to correspond in local reaction with gray oil and thymol-mercury.

R Hydrarg. resorcino-aceticus	5.6	
Paraffin. liquid	5.5	
Lanolin anhyd.	2.0	
(1 ccm. contains 0.387 of the metal.)		

THE TREATMENT OF ACNE.

Jamieson,² in an article on the subject of acne, asserts that in treatment local measures are of the first importance, while constitutional regulations are necessary as an adjuvant. The increased secretion of the sebaceous glands must be combated by forcing out the hardened sebum by a watch-key or comedo extractor, taking care, however, to use no force. Afterward douching, spraying or bathing in very hot water is effective. The soap selected should be a neutral or superfatted one, preferably one in which the alkali is potash rather than soda. A superfatted soap with sulphur, or Eichhoff's resorcin and salicylic soap may be cautiously used. The auto-inoculability of the acne pustules may be combated by touching the beginning

⁴ The Present Position of the Surgery of the Hypertrophied Prostate. By J. William White, M.D., *Annals of Surgery*, August, 1896, p. 166, etc.

¹ Monatsheft. für prakt. Dermatol., Bd. xvi, No. 10.

² British Journal of Dermatology, January, 1894.

papules with a solution of ichthyol in water, one part to four, or when pustules have appeared, by painting each with pure carbolic acid, and afterward coating with flexible collodion. [The latter procedure should be used sparingly and with [great caution. — REP.] When the pustules are large and inflamed they may be covered with Unna's mercury and carbolic acid gutta-percha-plaster-muslin, as has been recommended by Malcolm Morris in the case of boils. Lotions are more efficient than ointments. Sulphur is of great value, both for its action in exfoliating the outer layers of epidermis, and in antagonizing the growth of the pus micro-organisms. Precipitated sulphur with spirits of camphor, glycerine and lime-water may be employed, or when irritative effects are feared, the sulphur may be combined simply with calamine lotion. It is usually best to apply the sulphur lotion at night, washing it off with tepid water in the morning, and then dusting the face with a bland powder, as

R	Acid. borac.	:	:	:	:	:	:	10.0	
	Zinc. oxid.	:	:	:	:	:	:	10.0	
	Talc	:	:	:	:	:	:	80.0	M.
	Boli Armenise, q. s.								
	Plat pulvis colorata.								

For the ordinary case of acne rosacea the sulphur and calamine lotion is advisable. The dilated vessels may be destroyed by the scarifier or by electrolysis with a fine needle. When the pustules are very deep, they may be opened with a fine knife; and when large and obstinate, Unna's salicylic and creosote plaster as used in lupus, is effective. The best are those of the proportion of fifteen to thirty, or twenty to forty. The plaster is cut into strips and accurately applied to the whole area affected. It should be kept in place by a muslin bandage or by a cotton mask. The plasters are removed twice a day, the parts washed with superfatted potash soap and warm water, and then fresh plaster applied. This is kept up until the face is too tender for further application, or until the pustules have flattened down. The raw surface is then covered with Unna's zinc-ichthyol-salve-muslin. Afterward the treatment with lotion and dusting powder may be followed with effect.

Another method, which is hardly so satisfactory is the use of a strong resorcin paste, to exfoliate the epidermis.

R	Resorcin. alb.	:	:	:	:	:	:	40.0	
	Zinc. oxid.	:	:	:	:	:	:	20.0	
	Kaolin.	:	:	:	:	:	:	2.0	
	Adipis	:	:	:	:	:	:	28.0	M.

It is rubbed on lightly twice a day, without the use of water, and occasions some inflammation and pain. When the latter effect has been produced, a simple powder should be substituted until the desquamation has ceased, when the sulphur lotions may be employed.

Internal treatment consists in combating all errors that can be discovered. A wineglassful of Hunyadi Janos water in a tumbler of hot water taken on rising is an effective aperient, and iron, alone or in combination with sulphate of magnesia, is often indicated. Ichthyol is recommended in capsules containing from three to five minims twice a day.

Diet is to be carefully regulated. Water is to be taken freely midway between meals. Hot liquids and spiced dishes are to be avoided in acne rosacea or when there is a tendency to flush; as well as exposure to heat from the sun, or to the snow or sea. A cold sponge-bath in the morning, with the addition of salt to the water, is a stimulant to the cutaneous muscles.

Riding is especially extolled as the best form of out-of-door exercise.

THE INFLUENCE OF SOLAR RAYS ON THE SKIN.

Bowles^{*} considers from his observations on sunburn that the subject is of wider scope than might be supposed, and one that must claim the attention, not only of dermatologists, but of physicians, surgeons, physiologists and physicists. A previous paper by the same writer was published in the *Alpine Journal* in November, 1888.

It is admitted that the sun on snow burns more quickly than on rocks or in valleys, although the heat may be felt more in the latter situations. Veils, masks and snow-glasses are only adopted when the snow is reached. This seems singular, in consideration of the fact that the heat rays must be occupied in melting the snow and thus rendered latent. Glass and iron workers do not become burnt, although subjected to an intense heat; and it is maintained that the radiation from heated rocks and valleys causes a far greater heat than can be present on the snow — and yet one is not sunburnt. Hence there must be some other factor in sunburn than heat alone. Tyndall declared that he was never more burnt on the snows of the Alps than he was while experimenting with the electric light at the North Foreland lighthouse.

Instances are enumerated where several people have been sunburnt on the same day (when the heat was not excessive) who had never been burnt before; and these experiences raise the suggestion that the sun's rays are at times acted upon by atmospheric, electrical or other causes in such a way as to make their effect similar to that produced when the rays are reflected from snow. Sunlight reflected from freshly fallen snow has a greater burning force than that reflected from older snow. The writer has made numerous experiments in the Alps that show that when the face is painted there is no burning, and that on snow where one burns most, the temperature is lower than that on rocks and in heated valleys. The experience of an English officer in India, who had shown great susceptibility to the effects of the sun's rays is related. He had noticed that exposure to heat rays emanating from a source of low chemical activity, was never injurious in its effects, while men working with powerful arc electrical lights, as search-lights, were constantly affected in the same way as from direct solar rays, although the radiant heat from the search-lights was comparatively mild. From this he concluded that sun-stroke and sun-fever were not due so much to the heat of the sun as to the chemical power of the rays; and hence he argued that if he "treated himself as a sensitive plate, and enveloped his body in any color between yellow and ruby-red, he should protect himself to the same degree as the photographer protects his plate." Acting on this theory, he had all his clothes and hats lined with a cheap material of an orange color, with the result that he was able to bear intense heat much better than his comrades; while if the orange material were removed, the old susceptibility returned.

Rays reflected from the snow have an especial influence in producing pigment changes in the skin: This pigment, which is derived from the vessels, may be regarded as an effort on the part of nature to protect the nerves and vessels of the skin from further

^{*} British Journal of Dermatology, August, 1893.

irritation. It is asserted that snails, slugs, lizards and other animals assume darker colors the nearer they are to the snow. The people who winter in Davos become much darker than do those who summer there, although the sun is much stronger than in winter. Another peculiarity is the brown color of the chalets of the higher Alps, while those in less elevated regions, which are not touched by rays reflected from snow, are scarcely, if at all, so affected. The writer has investigated this subject with care, and has found that those parts of the chalets so situated that no rays reflected from the snow could reach them, were of a dirty-white color.

His conclusions are: (1) That heat of itself is not the cause of sunburn; (2) that there is strong evidence for believing that it is caused by the violet or ultra-violet rays of lights reflected from the snow, which reflected light is not necessarily of the same quality as that which is incident; (3) Captain Abney finds that the violet or ultra-violet rays are very strong at high altitudes, and believes that altitude has much to do with sunburn; (4) that altitude alone does not explain sunburn, for one may not be sunburnt on rocks, say at 10,000 feet, and yet be immediately affected on descending to a glacier 3,000 or 4,000 feet lower down; (5) that sunburn and snow-blindness arise from similar causes, and that sunstroke may be associated with them; (6) that rays from the electric light produce much the same effect as sun-rays reflected from snow; (7) that the bronzing of the skin and the browning of the wooden chalets are probably produced by rays reflected from snow.

The "summer eruptions" of Hutchinson [Bazin's *hydroa vacciniforme* — R&F.] — *eczema solare*, etc. — are briefly mentioned at the close as pathological conditions produced by the sun's rays, upon which the bearing of the foregoing observations must be determined by further study.

PATHOLOGICAL ANATOMY OF ERYTHEMA MULTIFORME AND PURPURA.

It has been repeatedly pointed out that erythema multiforme may occur symptomatically in the course of various infectious and inflammatory diseases, especially those of a suppurative character. Among these diseases the most prominent are cholera, typhus, septicaemia, uraemia, endocarditis, diphtheria, gonorrhoea and syphilis. Boeck has noted the appearance of erythema after angina, and abscesses of the tonsils. Finger himself has seen two instances: one of erythema maculatum et figuratum in a severe case of uraemia; the other of erythema annulare of the backs of the hands and forehead, in a case where an extensive ulcerated initial lesion was found in the rectum.

These erythemata may be interpreted in various ways. In the cases of uraemic erythema, we may suppose it a toxic erythema. If in the uraemic cases there is a suppurative process in the kidneys, or if, as in the case of abscess of the tonsils, there are deep-lying, local foci of suppuration, the explanation is twofold. It may be due to the absorption of toxins from the pus into the circulation; and in this case the erythema is a toxic one, belonging in the same class with the erythema ab ingestis, and the drug eruptions. But it may also be surmised that a part of the organisms that were the cause of the pus formation, find their way into the skin, and here exercise a local pathological

action. In this case the erythema would be classed as an infectious erythema, caused by a metastasis of bacterial nature. These erythemata are frequently described, and some writers have inclined to the one view, some to the other. Streptococci have been found by Neumann in the urine, in a case of typhoid complicated with erythema maculatum; and in the abscesses of the skin by Laufer in a case of typhoid accompanied by severe erythema multiforme.

Two cases were examined anatomically by Finger. The first case had been diagnosed as typhus fever, in that, three days before death a thickly-diffused papular erythema had appeared over the body, especially marked upon the backs of the hands and feet. The autopsy showed a disseminated diphtheritic process, beginning on the soft palate and pharynx, and extending down the oesophagus into the stomach. There was pericarditis, double pleurisy and metastatic foci in the kidneys and myocardium. From the latter, pure cultures of the streptococcus pyogenes were obtained.

Histological examination of the papules gave the usual meagre changes seen in an erythema. Bacteriologically, however, large numbers of cocci were found, solely in the vessels. The papillary blood-vessels were so densely packed with them that they gave the impression of injected capillaries. In the reticular layer they were found mostly in clumps, situated along the walls of the larger blood-vessels, and were to be seen also in the vessels about the sweat-glands and in those of the subcutaneous tissue. These cocci were arranged in chains and were constant in their appearance; and as the streptococcus pyogenes was cultivated from the metastases in the kidney and myocardium, it is fair to assume that they were the same species. Finger, therefore, considers that the papules of the erythema papulatum were directly produced by the streptococcus pyogenes, carried to the skin through the circulation. The affection may be described as a metastatic, bacterial dermatitis.

The second case revealed at the autopsy, fatty degeneration of the heart, slight atheroma of the aorta, slight enlargement of the spleen, subacute parenchymatous nephritis of both kidneys, together with numerous spots of purpura on the trunk and the extremities.

Microscopically there were found extravasations of red blood-globules in the papillary and reticular layers of the corium, and a remarkable number of polynuclear leucocytes. The latter were found to be especially numerous in the periphery of the hæmorrhagic foci. Small, round cocci, arranged singly or in pairs, were found scattered through the hæmorrhagic foci, and especially in their periphery. They were also found in numerous blood-vessels. The microscopic examination shows, therefore, that there was not simply a hæmorrhage, but also an inflammation, as proved by the presence of the numerous polynuclear leucocytes. These pus corpuscles point to a local inflammatory irritation, such as extravasated blood cannot cause, but which is doubtless produced by the cocci which are brought to the skin by the blood-vessels, and cause both the hæmorrhages and the inflammatory appearances.

These two cases, therefore, are proved by the microscopic and bacteriological examinations to be neither angio-neurotic nor toxic erythemata, but metastatic bacterial dermatitides. It is not possible to predict the frequency of these forms, yet it is probable that

* Finger: *Archiv. f. Derm. u. Syph.*, 1893, Heft v.

many cases of symptomatic erythema, especially those associated with suppurative processes, as tonsillary abscess, suppurative nephritis, pyelo-nephritis and cystitis, have the same etiology. The same may be said of the erythemata in severe typhoid, endocarditis and puerperal affections. The idiopathic erythemata probably have a different etiology. Pieces of skin from two cases of the latter (which had been in alcohol for a long time) were examined, with negative result. A negative result was also recorded in six cases of purpura, which had appeared in connection with endocarditis, pneumonia and diphtheria.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR meeting, Monday, January 8, 1894, the President, DR. C. F. FOLSOM in the chair.

DR. G. W. GAY showed a case of

LIGATION OF BOTH COMMON CAROTID ARTERIES

in a healthy-looking man twenty-seven years of age. When he was seven years old, a small bunch was noticed upon the left side of his neck just above the collar-bone. It grew very slowly, till three years ago, since which time the size had markedly increased, until at the time of operation, it was as large as a small orange. The tumor had always pulsed; this was controlled by pressure upon the artery below.

On July 31, 1892, the left common carotid artery was tied an inch above the clavicle with two silk ligatures half an inch apart, and the vessel was divided between them. No shock or other disturbance of any sort followed the operation. The patient was sitting up in two weeks, and was discharged well in three weeks.

On June 13, 1893, the right common carotid artery of this man was tied in the same manner, as described above, for a small aneurism situated at the bifurcation into the external and internal carotids opposite the top of the thyroid cartilage. This tumor, an inch in diameter, pulsed like the one upon the left side before operation, and had been in existence ten years.

In exposing the artery, a large vein, probably the internal jugular, was wounded with the director, giving rise to a troublesome hæmorrhage from its location at the bottom of a deep wound. On coming out from under the influence of the anæsthetic, it was found that the patient's voice was very hoarse. A laryngoscopic examination by Dr. Farlow showed paralysis of the right vocal cord, due undoubtedly to entanglement of the recurrent laryngeal nerve in the ligature applied to the vein.

The wound healed by first intention, and the man left the hospital in three weeks. Both tumors were free from pulsation. At the present time, the tumor upon the right side has disappeared entirely. The original tumor upon the left side is nearly gone, but about three months ago, that is, three or four months after the last operation, a small pulsating swelling made its appearance over the upper edge of the tumor upon the left side. Evidently a small collateral branch

has found its way into the original sac, and will require further attention. The man is well with this exception, and is at work in a dental instrument manufactory. The voice is as good as ever it was, except being a little weak, when he attempts to shout. The hoarseness has entirely disappeared. There were no cerebral symptoms following either operation.

DR. MYLES STANDISH read a paper on

TWO CASES OF CHANCERE OF THE EYELID.¹

DR. ABNER POST: I have very little to add to Dr. Standish's interesting account of the two cases. The chancre of the eyelid occurs occasionally in other than ophthalmic clinics. I am pretty sure I have seen two cases. The first was referred to me by Dr. H. W. Williams. The ulceration occurred rather on the external surface of the lower lid, so that its appearance differed somewhat from that described by Dr. Standish, as it would naturally. In Dr. Standish's second case the ulceration was upon the conjunctival surface, where it had that grayish base which is described in all these cases and which resembles more or less closely the surface sometimes seen under the prepuce. In the first case of mine the ulceration was very slight and had that reddish appearance which is common to chancres whose ulcerated surface is exposed to the air. It was surrounded by an indurated areola and resembled the chancre more closely than anything else; and it may be worth while to mention that this woman on whom this supposed chancre occurred was the wife of a railroad brakeman employed somewhere in the vicinity of this city, though her home was either in Vermont or in New Hampshire. The brakeman I never saw. This sore had existed some time, the induration increasing. It had been treated in various ways; and I simply suggest the primary syphilitic source as the most probable solution of its cure. There were no pre-auricular glands to be felt, nor were the glands at the angle of the jaw enlarged at all. It began to diminish very slowly, but very steadily under the influence of mercurials internally, and vanished. She was under my observation for a few weeks; but as soon as the supposed primary sore had disappeared, she disappeared, and whether the diagnosis was ever confirmed in any subsequent history I do not know. She was confined to her bed immediately afterwards by some supposed disease of the chest which was acute. Some time or other I shall know the subsequent history of that case; and if it proves to be syphilitic I shall be very glad to report it.

The other case is the case of a child of five, who was healthy up to the time of her infection. The father and mother had become syphilitic after her birth. They had a syphilitic child in the family, and this little syphilitic child lived with the syphilitic father and mother and baby in close intercourse. Her syphilis was evident from glandular enlargement and syphilitic papules which were particularly prominent about the region of the vulva and about the mouth and nose. The mother gave the history of the appearance of a sore on the eyelid which she supposed was an ordinary sty. That was the first thing. The eruption appeared a few weeks after. When I last saw her the other eruption had disappeared. There still remained on the spot of the supposed sty a certain amount of thickening, such a condition as one finds after primary lesions on other parts of the body. The pre-auricular gland

¹ See page 237 of the Journal.

as not enlarged, though the glands about the neck were. I can only say that in her case I believe that the sore on the eyelid was the primary sore, the point at which syphilis entered the system.

I am particularly glad to have such cases reported, because it serves to emphasize the fact that syphilis is not simply a disease of venereal origin, but that it is a disease which is communicated from one individual to another, no matter what the contact or whether the contact be immediate or mediate. The primary sores that occur about the face are very numerous indeed; I have within a month seen four primary sores of the lip. Towels are by no means the only media by which such inoculation takes place. During the same time I have also seen four physicians who have been inoculated upon the hand in some shape or other. It is, I think, hardly extending the subject too widely to draw attention to the other numerous cases which exist about us in which syphilis has been contracted in some other than the orthodox manner.

DR. E. WIGGLESWORTH: I agree entirely in regard to the necessity for such papers as this, and I am sorry that I cannot from memory report any cases occurring in my own individual practice. The public at large are hardly anatomical enough to recognize the distinctions of specialties, and these cases go to the ophthalmologist instead of the dermatologist, as a rule. There is one thing to be said; namely, that these lesions do not always occur at the entrance of the lachrymal duct. They may be found even inside of the lids, as well as outside, or upon the border of the lids. They may be found upon the caruncle itself; and these are, perhaps, the worst cases of all. I recall with reference to the number of reported cases, which Dr. Standish tells us is now about thirty, that when I was in Vienna, in 1866, the cases amounted to only ten. Since then I have not taken the opportunity to look up the number. At that time there were only ten, including those on all parts of the lids, both external and internal. There are now in the Warren Museum three of the preparations of Baretta, which represent very well the appearance of this lesion before, during and after treatment. The sclerosis was upon the upper eyelid of a seamstress.

Our first duty, of course, is to decide whether the lesion is in its nature specific; but even then there is some danger of error as to stage, since papules, or other manifestations of secondary lesions, may occur here as well as elsewhere; and it is not relatively rare to find even gummata in this situation, which belong, of course, to the later stages. The method of infection is by means of the fingers, as the rule. This seamstress had, I think, been sewing some bands to be applied to a person, and perhaps applied them herself, and then carried the finger to the eye. Another case is reported of a man engaged in the "orthodox" practices alluded to by Dr. Post, who felt an itching in his eye, and carried the hand to the eye and rubbed it violently for quite a while. This was followed by a primary lesion. There are other cases where, at accouchements, physicians have infected themselves. But the fact of primary lesions occurring upon the face and other parts, to which Dr. Post alluded, was very well shown this morning in my clinic at the City Hospital. The wife of a laboring man appeared with two primary lesions, which fact is, of itself, relatively rare, just below the angle of the mouth, on the left-hand side; these were of two months' or more dura-

tion. She gave a very good history of initial manifestations; that is to say, red spots, and subsequently papules with dry crusts on top; and, what is especially interesting, stated that they passed by degrees from that condition into the secondary stage of mucous papules; and they are now in the condition of mucous papules, and very well marked. The rest of the body is covered with papules. The general treatment is, of course, the same as when the initial lesion is situated elsewhere.

DR. F. B. GREENOUGH: I have never seen a chancre on the eyelid. Of course, there is no reason why it should not occur there, the only factor being to have the syphilitic virus in contact with the mucous membrane or skin where it may be absorbed, and we see the primary lesion appear in all sorts of places. Dr. Standish does not mention any examination to prove that there was no primary lesion anywhere else. I have no question of the diagnosis or of the primary lesion; but at the same time, in all such interesting cases as this, I think the possibility of primary lesion on the penis or somewhere else ought to be excluded. In the first case he reports I am rather astonished at the size of the glands—as large as a hen's egg. I have seen several chancres about the lips, and one or two on the face, but never saw the glands anywhere near as large as that. I think we owe a great deal to Dr. Standish for his interesting paper.

DR. POST: May I refer to one remark of Dr. Wigglesworth in regard to the rarity of a double inoculation, or two primary sores at the same time? My own experience differs somewhat from Dr. Wigglesworth's, apparently. It is customary to say that the primary sore of syphilis is single, while non-syphilitic venereal sores are multiple. There is certainly some foundation for this, but I should prefer to say that in the majority of cases the primary sore is single; but it may be multiple, exactly as a man may be vaccinated in one spot or in several. It seems to me that the stress that is laid upon a single sore as a diagnostic point of the initial lesion of syphilis is carried too far, and leads to error.

DR. GREENOUGH: I should like to endorse Dr. Post's remarks. Dr. Chenery, who was my assistant at the Dispensary, made statistics. I have forgotten the number, but there are certainly quite a number of cases in which there were two primary sores. I think I have seen three.

DR. WIGGLESWORTH: I merely spoke of the relative frequency. Of course, what Dr. Post alludes to is perfectly true. The case was of especial interest, not only from the comparative rarity of multiple lesions, but also from the fact that we had here two (primary) lesions occurring at the same time, and of the same size, close together, upon an unusual situation, and passing by degrees into (secondary) mucous papules. There was a sore on the mouth of the husband, so that there was an explanation of the source of inoculation.

DR. STANDISH: Concerning the question of the possibility of these patients having an initial lesion somewhere else, in the first case we had a physical examination, and there was no lesion anywhere else; in the second case the man was very intractable, and no such examination was possible. The glands in the neck were very large in the second case—so much so as to obliterate the concavity under the angle of the jaw, so that the line of the face ran straight down to

the shoulder. We must remember he was suffering from pharyngitis and tonsillitis, which may have aggravated matters very much. The situation of these initial lesions, of course, may be anywhere on the outside or inside of the lid.

DR. M. H. RICHARDSON showed

SPECIMENS OF VERMIFORM APPENDICES PRESENTING UNUSUAL FEATURES.²

Recent Literature.

Atlas of Clinical Medicine. By BYRON BRAMWELL, M.D., F.R.C.P., F.R.S. Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Vol. II, Parts II and III. Edinburgh: Printed by T. and A. Constable. 1893.

The second volume of this very handsome "Atlas of Clinical Medicine" is now completed with the issue of the third part. We have already noticed the previous issues. In the second and third parts of the second volume, the standard promised at the inception of the work is maintained, and the original excellence of letter-press and plates continues to be realized.

The text of Part II is largely devoted to syphilis and Asiatic cholera, and most of the plates are illustrative of the former disease. The active treatment of the primary sore, and the exhibition of internal remedies before the appearance of secondary manifestations, as advocated in the text, has the authority of Hutchinson, but is not generally regarded in this country as having the sanction of our best authorities.

Part III is devoted to exophthalmic goitre, acromegaly, exfoliative epidemic dermatitis, unilateral hypertrophy of the face. The plates illustrative of acromegaly, taken from a so-called "giantess," are very characteristic.

Clinical Lectures on Abdominal Hernia; chiefly in Relation to Treatment, including the Radical Cure.

By WILLIAM H. BENNETT, F.R.C.S., Surgeon to St. George's Hospital, Member of the Board of Examiners for the Fellowship, Royal College of Surgeons of England, and Lecturer on Clinical Surgery in St. George's Hospital Medical School. With twelve diagrams. London and New York: Longmans, Green & Co. 1893.

These lectures were delivered at St. George's Hospital, and include the cases occurring in the author's wards. The work has the merit of being what it represents, clinical lectures on hernia. It is a valuable one, in that it records the ideas of the writer, a man of ripe experience, who has paid considerable attention to this subject. It is a book that can be read with interest by all, and may be of value to practitioners who meet obscure hernia, which are often very perplexing. A good portion of the lectures is devoted to the symptoms of strangulated hernia. Formerly the symptomatology of hernia was of greater importance than now. The pre-antiseptic fear of opening the sac of a hernia is gone, we hope never to return. To-day the conservative surgeon explores any tumor occupying the seat of a hernia if there are present any symptoms suggesting the possibility of strangulation. The danger of this exploration under modern methods is far less than the inevitable errors in judgment of attempting to mentally eliminate strangulated hernia.

² See page 232 of the Journal.

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CHRONIC ARSENICAL POISONING FROM WALL-PAPERS AND FABRICS.

THE question as to the form in which arsenic enters the system in cases of chronic poisoning from arsenical wall-papers has been the subject of much controversy. The theory that the symptoms are due in some cases to the irritant action of detached particles of arsenical pigment has received important confirmation in the frequent detection of arsenic in the dust collected from rooms containing arsenical papers. On the other hand, the occurrence of numerous cases of poisoning under conditions most unfavorable to the separation of arsenical dust has led to the theory that, under certain conditions, some gaseous or volatile arsenical compound may be set free from arsenical papers.

Many experiments have been made for the purpose of testing the latter theory, but the results have been, for the most part, adverse, until the recent investigations of Gosio,¹ who found that a volatile arsenical compound could be formed by the action of moulds on organic matter containing arsenic. Hamberg and Bischoff alone of the earlier investigators obtained a volatile compound, which they believed to be arseniuretted hydrogen. The results of Gosio's recent investigations suggest, however, that these earlier views as to the nature of the volatile compound formed were probably erroneous; though it seems quite certain that a volatile arsenical compound of some kind was obtained in the experiments of the two authors mentioned.

Two recent papers by Prof. Charles R. Sanger,² of Washington University, St. Louis, who has repeated the work of Gosio and proved its correctness, form, from a chemical point of view, the most important contribution to the literature of this subject which has yet appeared in this country.

In his first paper the author gives a lengthy but interesting review of the investigations relative to the

¹ The Journal, cxxvi, 201; cxxvii, 185; cxxviii, 340.

² Proceedings of the American Academy of Arts and Sciences, vol. xxix.

subject which have been made up to the present time, including those of Gosio, and describes very minutely the various experiments which he has himself made, including some earlier ones hitherto unpublished, the results of which were, owing to unsuitable conditions, adverse to the theory of the formation of a volatile compound.

A description of these experiments cannot be given, for obvious reasons, in the editorial column. The fact, however, that Gosio's results have been substantiated by so careful an investigator as Sanger, justifies the following brief *résumé* taken from Sanger's papers:

It appears that a volatile compound is generated by the action of the following moulds on arsenical organic matter: *Penicillium brevicaulis*, *Mucor mucedo*, *Aspergillum virens*, and *Aspergillum glaucum*, a few others having been found which have a slight action. Of these the most intense action is caused by the first, a mould discovered on decaying paper, though *Mucor mucedo*, which is more widespread than the first, is only a little less active. The conditions for development of the compound by these moulds are moisture, a temperature from 15 to 35° C. (60 to 95° F.), and a supply of oxygen, without which no action takes place. A large amount of arsenic retards the growth, which goes on best in a ground containing 0.01 to 0.05 per cent. The best nutritive material is a carbohydrate. The development may take place in presence of arsenious oxide or its derivatives, or of arseniates, though the latter seem to Sanger to have given the best results. Little or no action is obtained from the sulphides.

The nature of the volatile compound is as yet unknown. It is not arseniuretted hydrogen, and indeed it is questionable if any arseniuretted hydrogen is formed. Sanger is inclined to the opinion that it is an organic derivative of arsenic pentoxide. It has, however, little resemblance to any of these derivatives thus far isolated.

The author attributes the adverse results obtained in his earlier experiments, and the similar results obtained by some of the other investigators to the fact that there was either too much arsenic for the specific bacteria to tolerate, or else the latter were not present. A partial explanation is possibly found in the fact that many of the earlier investigations were made upon the assumption that the volatile compound formed, if any, must be arseniuretted hydrogen.

The formation of a volatile compound from decaying arsenical matter may now be regarded as settled beyond any reasonable doubt by the investigations of Hamberg, Gosio and Sanger. In this formation we have a complete explanation of those cases of chronic arsenical poisoning which occur under conditions in which the separation of arsenical dust cannot be admitted. Gosio, while admitting that poisoning from arsenical papers may at times be due to the inhalation of solid particles mechanically detached from the paper, believes that in a majority of cases the arsenic is absorbed in the form of the volatile compound.

Sanger's second paper is made up largely of the

record of published cases of chronic arsenical poisoning in which analytical work is included, and of cases which have come to his own notice, in which analyses of wall-paper and urine were made. The chief value of this paper is found in the fact that the analyses, both of paper and urine, in the author's own cases were quantitative. He finds that the amount of arsenic eliminated by the kidneys is very small, varying from 0.002 mgr. to 0.068 mgm. per litre. These results are in accord with those obtained by others who have had experience in this class of cases.

The author concludes that the elimination of arsenic by the kidneys in cases of wall-paper poisoning is very slow. He apparently bases his conclusions upon the fact that, in the cases reported by him, the time during which arsenic still appeared in the urine was usually very long. In five cases, for example, arsenic was still detected after the lapse of 60, 96, 100, 127 and 140 days respectively. The author's conclusions on this point are justifiable only in case freedom from exposure to other sources of arsenic during the periods named was secured. There is, however, no evidence whatever of any such freedom in the history of the cases reported by him. The existence of other sources can hardly be denied. There are apparently some which are as yet undetected. For this reason the settlement of the question of rate of elimination is, we believe, attended with peculiar difficulties, and much work must yet be done before the time required for complete elimination can be determined with any degree of accuracy. Sanger thinks that the question of the limit which can be set to the dangerous amount of arsenic in a wall-paper is one which should be considered very carefully, since Gosio's work and his own has shown that a very small amount of arsenic may be quite as good a source of the volatile compound as a very large amount. He does not think, with the chances for the formation of the volatile compound, that 0.1 gr. per square yard can be pronounced with certainty harmless; and suggests that a quantitative analysis of each arsenical paper be made, in order that the physician may himself decide as to whether the paper should be rejected or not.

A NEW BILL FOR THE ESTABLISHMENT OF A NATIONAL BUREAU OF HEALTH.

THE new bill, prepared by a Committee of the New York Academy of Medicine, for the establishment of a National Bureau of Health in the Department of the Interior, promises, if it meet with favorable consideration in Congress, to give to the country the most satisfactory national health organization that has yet been proposed.

The Bureau, in accordance with the provision of the bill, would consist of a Commissioner, appointed by the President, and an Advisory Council made up of delegates, one from each State, designated for this service by the respective governors.

If, as might reasonably be expected, the members

of the Council are selected from the State Boards of Health, there would then be brought to the support of the national organization the influence of a body of men each of whom has a well-recognized position in his own community, and a legitimate influence upon the representatives of his State in Congress. Their presence on a national board would go far to remove the vague fears that have prevailed in some quarters as to the tendency of a purely central organization to usurp powers, which could more safely and wisely be left to local authorities.

The duties of the Bureau would be to collect and diffuse information upon matters affecting the public health, including statistics of sickness and mortality in the several States; the investigation of experimental and other methods and means of prevention of the causes of diseases; the collection of information with regard to the prevalence of contagious and epidemic diseases, both in this and other countries; the publication of the information thus obtained in a weekly bulletin; to prepare rules and regulations for securing the best sanitary condition of vessels from foreign ports, and for the prevention of the introduction of infectious diseases into the United States, and their spread from one State into another, which rules, when approved by the President of the United States, shall have the force of law; and to ascertain, by a suitable system of inspection, that these rules are properly carried out and enforced; to advise and inform the several departments of the government, and executives and health authorities of the several States on such questions as may be submitted by them to it, or whenever, in the opinion of the Bureau, such advice and information may tend to the preservation and improvement of the public health; and in general to be the agent of the general government in taking such action as will most effectually protect and promote the health of the people of the United States.

The act provides that this Bureau shall be responsible for the making of those rules and regulations which are the foundation of systems of quarantine between the various States of the Union as well as between Nations; yet these rules, having first received the approval of the President, are to be executed, as hitherto, under the supervision and authority of the Treasury Department. While this limitation of the Treasury Department to purely executive functions may be distasteful to the Marine-Hospital Service, it can hardly be claimed, on the other hand, that this body could adequately perform the multifarious duties above set forth.

One function is bestowed upon the Bureau, which is peculiar to this bill, and would probably be of great benefit — the duty of the Bureau to inspect and report upon the conduct of the quarantine establishments formed under the provisions of this act.

State and municipal authorities are permitted to enforce, if they so elect, such measures as are directed by the President, in accordance with the recommendations of the Bureau; but if such authorities fail or

refuse so to do, then the President shall enforce the rules by such means as may seem appropriate to him.

The quarantine sections of the bill have, evidently, been very carefully framed and follow closely the provisions of Senator Harris's bill. No member of the Senate has been more interested in public health legislation than the member from Tennessee, nor is there any one whose opinion would have more weight in that body.

The Bureau is especially directed to take such action, by correspondence or conference, as will tend most effectually to secure the co-operation of State and local boards of health in establishing and maintaining accurate systems of notification of the existence and progress of contagious and infectious diseases; and to extend, if possible, such systems to foreign countries.

In general, the motive that appears to have prevailed in the making of this bill is the one which has led to the most useful public health bodies which the country has so far had. That is to say, the intention seemed to have been to create a central health authority, the business of which shall be the collection of all sanitary knowledge and the prompt diffusion of the same.

If this Bureau is able to deserve the confidence of the country, experience with similar bodies tell us that executive functions will from time to time be given to it. The almost hopeless confusion in which the present Congress is involved, may, possibly, prevent this new measure from receiving the consideration it fairly deserves; but the bill has been so carefully prepared and so wisely framed that we hope it may be insistently presented at Washington until favorable action is taken.

MEDICAL NOTES.

YELLOW FEVER AT RIO JANEIRO. — Yellow fever is reported to be rapidly increasing in Rio Janeiro, the deaths being more than twenty each day.

A NEW ORIFICIAL JOURNAL. — A new medical journal has been published in Paris, devoted to orificial medicine. It is edited by M. D. Magitot and is to be known as the *Revue Mensuelle de Stomatologie*.

HONORS FOR PROFESSOR HENOCH. — The Emperor of Germany has conferred the Order of the Red Eagle, of the Second Class, with the crown and oak leaves, on Professor Henoch who has retired from the chair of children's diseases in the University of Berlin.

A PHYSICIAN'S HOUSE INJURED BY DYNAMITE. — The house of Dr. J. E. Baker in Lancaster, Pa., was seriously damaged last week by a dynamite cartridge which some mischievously inclined person exploded under the porch. It is not often that physicians are thus molested, as even the wantonly malicious seem to have a little respect for a doctor.

THE NEW YORK VEGETARIAN SOCIETY DINNER. — The New York Vegetarian Society held its second annual dinner last week, and had a most elaborate menu. Among the courses were *cream of celery soup*;

Brussels sprouts, cream sauce; Nesselroude pudding; Stilton, Roquefort, and Camembert cheese. It is to be presumed that these were all made either with coconut milk or the juice of the milk-weed.

DEATH OF A HOSPITAL HOUSE-OFFICER.—Mr. Lewis Burrow, a senior house student at St. Thomas's Hospital, London, died recently from septicæmia, resulting from the inoculation of a scratch on one finger while making an autopsy.

THE TOLEDO MEDICAL COLLEGE.—In accordance with the recommendation of the Committee on the Administration of the Medical Practice Act, the Secretary of the State Board of Health of Illinois has been directed to recognize the diploma of the Toledo Medical College as entitling the holder to a State certificate for practice.

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.—The Eighth International Congress of Hygiene and Demography is to be held at Budapest, Hungary, in the first week of September next. The following is a list of the subjects for discussion in the Hygiene Division:

(1) *Ætiology of Infectious Diseases*; (2) *The Prophylaxis of Epidemics*; (3) *The Hygiene of the Tropics*; (4) *The Hygiene of Trades and Agriculture*; (5) *The Hygiene of Children*; (6) *The Hygiene of Schools*; (7) *Articles of Food*; (8) *The Hygiene of Towns*; (9) *The Hygiene of Public Buildings*; (10) *The Hygiene of Dwellings*; (11) *Hygiene of Communication (Railways and Navigation)*; (12) *Military Hygiene*; (13) *Red Cross*; (14) *Saving of Life*; (15) *State Hygiene*; (16) *The Hygiene of Sport (Inurement and Care of the Body)*; (17) *The Hygiene of Baths*; (18) *Veterinary Hygiene*; (19) *Pharmacology*.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, March 7, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 53; scarlet fever 28; measles 7; typhoid fever 6; small-pox 6, and 2 deaths. On the 3d of March the steamer *Venetian* of the Leyland line arrived at quarantine with four cases of varioloid on board, one of which was fatal soon after being removed to quarantine. There were no cases in Massachusetts outside of Boston.

DEATH AT ONE HUNDRED AND THREE YEARS.—Ann Cauley, the oldest woman in York County, Me., died in South Berwick March 2d, aged one hundred and three years and seven months. She was born in Ireland.

THE NEW MEDICAL PRACTICE LAW IN CONNECTICUT.—The first semi-annual examination under the provisions of the new medical practice law was held last week in New Haven. Eight candidates were examined by the committee appointed by the State Board of Health, and only five were given certificates.

CONNECTICUT FERTILITY.—A young married couple in Roxbury, Conn., have recently been reported to have had their family increased by the birth of triplets. The father is sixteen years old, the mother is thirteen; and the three new children, a boy and two girls, are said to have weighed twenty-three pounds!

NEW YORK.

THE BOARD OF HEALTH AND FAMILY PHYSICIANS.—At the monthly meeting of the Medical Society of the County of New York, Dr. Carl Beck read a paper on "Pyothorax and its Treatment"; and Dr. W. M. Seward one on "Ectopic Gestation." Dr. Daniel Lewis called up the following resolution, which had been laid on the table at a former meeting: "*Resolved*, That it is the sense of this Society that if the Board of Health is to preserve its influence in the community in the highest degree, it should extend to the family physician the same consideration which one member of the profession owes to another." In advocating its passage Dr. Lewis said that, although the wording of the resolution was somewhat ambiguous, the members present knew very well what it referred to. Health inspectors frequently visited patients of practising physicians and took occasion at these times to prescribe remedies and counsel treatment at variance with that of the attending physician. This was unprofessional, and should not be tolerated. The attending physician should, at least, be consulted before any change in the treatment of a case was made. In the discussion which followed, Dr. Joseph D. Bryant took exceptions to Dr. Lewis's remarks, and denied that the course of the inspector was, as a rule, such as to warrant the strictures made by him. He thought, however, that individual cases and epidemics sometimes occurred where prompt action was called for, and the exigency of the circumstances compelled the inspectors to violate the letter of the resolution while they followed the spirit of it. He therefore proposed the following addition as an amendment: "Provided that such course shall not conflict with public policy." This was accepted by Dr. Lewis, and the resolution was passed as thus amended.

SMALL-POX.—The concealment of cases of small-pox in tenement-houses continues to give the Board of Health serious trouble, and on one day recently no less than ten such cases were discovered. Two or three cases of the disease have occurred at the State prison at Sing Sing, and it is thought that it was brought there by some of the newly-arrived convicts, or else through the rags taken there for sorting by the prisoners. During the week ending March 3d there were reported 80 cases of small-pox in the city, and six deaths; against 29 cases and five deaths the week previous. The total mortality for the week was 857, against 830 in the week ending February 24th.

A FATAL CASE OF SINGULTUS.—A case of death from hiccup is reported from Newark, N. J. The patient was John Carberry, a bar-tender, thirty-three years of age, and the affection lasted more than thirteen

weeks. At the time the hiccupping commenced, on November 29th, he was seated in a barber's chair getting shaved. After a large number of remedies had been tried in vain, a novel operation was undertaken in the hope of saving the patient's life. Under the hypothesis that the source of trouble was irritability of the inferior dental branch of the inferior maxillary nerve, which was communicated to the phrenic nerve, the inferior dental was cut down upon and severed; but this procedure also proved fruitless, although some temporary improvement in his condition followed. The only thing that seemed to be of any service in checking the attacks was ice-cream, which he took freely. He gradually became weaker, and finally died of exhaustion. At the time the hiccup commenced Carberry was strong and robust, and weighed one hundred and fifty pounds, but just before his death he weighed only eighty pounds. No autopsy has as yet been reported in the case.

MORTALITY.—The State Board of Health reports 10,948 deaths in the month of January, representing an annual death-rate of 19.70 per thousand of the estimated population. In December, the annual death-rate was 19.20 per thousand. Influenza became epidemic in December, and 1,000 deaths were attributed to it in December and 1,200 in January. This is more than twice the mortality from the disease during the same months in the epidemic of last year. In New York city, however, influenza has thus far been much less fatal than last winter.

Miscellany.

PROFESSOR TYNDALL AND BOSTON RESOURCES.

In an account of Professor Tyndall's visit to this country in 1872, Miss Youmans¹ publishes some letters of the physicist, which give an interesting revelation of the mental state of even a most highly educated Englishman concerning the commercial resources of Boston. Writing for advice as to his arrangements he says:

August 21, 1872.

MY DEAR YOUMANS: I am in the midst of my preparations here, and shall have them ready so as to enable me to start in the *Russia* on the 28th of September.

I shall need your friendly aid in getting my apparatus through the custom house. . . .

With regard to the lecture rooms, in all of them I must be able to lower the lights promptly. Most of my experiments will be projected on a screen.

I purpose mixing experiment and philosophy in due proportions.

Do your audiences look down upon the lecturer?

I suppose I can borrow an air-pump in New York if I need it.

I suppose if they do not possess ice in Boston, I can have a clear block sent there from New York.

Acids, of course, are to be had everywhere.

Are they in the habit of using compressed hydrogen and oxygen in iron bottles in America; and, if so, could I borrow such bottles?

¹ Popular Science Monthly, February, 1894.

I am taking one screen with me, but I shall sometimes require two. Is such a thing to be borrowed?

Now, like a good fellow, answer these questions within twenty-four hours, and oblige

Yours, ever faithfully,

JOHN TYNDALL.

And again:

FOLKESTONE, September 19, 1872.

MY DEAR YOUMANS: . . . I hope they have clear ice in Boston, also nitric and sulphuric acid; if not, I must stock myself from New York. I have written a line to Dr. Draper on this point; but I should be truly thankful to you if you would make this point out for me, and if the acid is not to be had at Boston, send there a carboy of nitric and one of sulphuric acid.

I am quite shocked at the mass of apparatus I have collected round me. Still I thought it best to take light apparatus—batteries, electric lamps and costly optical apparatus—with me, having just given the experiments with them here.

Yours ever,

JOHN TYNDALL.

MR. LAWSON TAIT'S USE OF ANÆSTHETICS.

In a letter to the *Buffalo Medical Journal*,¹ Mr. Lawson Tait, in replying to Dr. Robinson's remark that few English surgeons "engaged in abdominal surgery give much attention to the kidney in their work,"² says that it is the very care he has given to the study of the effect of anæsthetics on the renal functions which makes him prefer chloroform to ether for abdominal and ovarian surgery. He says that the most important sentences he has ever published in his life are the following:

"The question of the best anæsthetic for use in abdominal surgery is one to which, of course, I have given a very large amount of attention; and it is very singular that in the class of drugs, the action of which there can be the least doubt about, we are, as yet, certainly very unsettled in our views. Like all pupils of Simpson, I began my professional life with a most profound belief in the advantages of chloroform over all other anæsthetics. I have never seen an accident from chloroform, but, partly by reason of the fear of inquests and partly by the example and teaching of Dr. Keith, a belief grew in my mind that ether was preferable to chloroform, and at first I had the impression that the sickness after ether was less marked than after the use of its rivals. I was not, however, very long in discovering that ether has special risks for people with a tendency to bronchitis; and later on I discovered, and have already published the fact, that during the administration of ether the secretion of urine is completely arrested. It was subsequently very forcibly impressed on me that, for patients with damaged kidneys, ether is a dangerous anæsthetic, and although I cannot say that I have seen any fatal results arising from this peculiarity of its action, I certainly have had abundant cause to fear it. My first alteration, therefore, in my views concerning ether, was to limit its application to patients under forty, but even after this I found my confidence in its safety greatly diminished by the fatal occurrence of bronchitis in a case of hysterectomy in a woman aged thirty. In this case the patient's breathing was embarrassed from the moment she recovered from the anæsthetic, her urine was scanty and became ultimately albuminous, and she died on the fourth day from suffocative catarrh, the post-mortem showing that, so far as the operation was concerned, everything was perfectly satisfactory."

The chief reason why these remarks made little impression when first printed in 1884 was the fact that England is emphatically the land of coroner's inquests,

¹ February, 1894.

² What kills after Laparotomy, *Buffalo Medical Journal*, December, 1893.

which are things an English practitioner hates above everything else.

"Coroners seem always fond of making public inquiry to cases of death under an anæsthetic. Every such death therefore, blazoned abroad until the use of chloroform has become a *bête noire* of surgical practice alike for practitioner and patient. Chloroform, when it kills, which it does very rarely, kills on the instant, and, in England, there is an inquest. When ether kills, which it does far more frequently, it kills some days after its administration, and there is no inquest, not even an inquiry.

"To get over the difficulty, I began to use a mixture and soon found that it was a great advance over either of the two anæsthetics used separately. I vary the proportions according to age, increasing the proportion of chloroform from one-third to two-thirds rapidly after forty, and in a case there is any suspicion of renal or pulmonary incompetency.

"Twelve years' experience has driven entirely out of my practice all those disasters which ether brought into it. In a number of administrations, now amounting to a great many thousands, not a mistake has occurred, and alarms occur only where some new and inexperienced administrator will indulge in such fantastic tricks as pushing back the tongue by pressing up the jaw, or violating in some other foolish way the simple rules for administration laid down over forty years ago by Simpson, not one of whose methods has yet been surpassed."

WILLIAM JOHN GORDON FOGG, M.D.

SOUTH BOSTON, March 2, 1894.

At a meeting of the physicians of South Boston the following preamble and resolutions were adopted:

Whereas, Death has removed from our midst our much-esteemed friend and colleague, Dr. W. J. G. Fogg, and whereas, it is fitting that we express our feeling of sorrow at this great loss, therefore,

Resolved, That we gladly testify to our appreciation of his great professional skill, his readiness to advise when called upon by any of us, his honesty of principle toward his medical brethren and toward his patients; all of which we shall ever hold in grateful remembrance.

Resolved, That the death of Dr. Fogg is a loss to the community in which he lived and for which he worked so many years.

Resolved, That a copy of these resolutions be sent to his afflicted family; a copy be published in the local papers, and in the *Boston Medical and Surgical Journal*.

PER COMMITTEE.

NORFOLK SO. DISTRICT MEDICAL SOCIETY. SAMUEL MAGNUS DONOVAN, M.D.

March 1, 1894.

Whereas, it has pleased Almighty God to remove from us our beloved friend and co-worker, Samuel Magnus Donovan, M.D.,

Resolved, That we, the Fellows of the Norfolk South District Medical Society, mourn the loss of a genial friend and an active member of this organization. Cut off in the prime of manhood and in the noon-tide of a useful and honorable career, we have lost a valued member of this Society; the community in which he lived, a trusted counsellor and a skilful physician.

Resolved, That we offer our kindly sympathy to the family of our deceased brother in this hour of mourning.

Resolved, That these resolutions be entered upon the records of the Society, a copy of the same be forwarded to the family of the deceased, and a copy be furnished for publication to the *Quincy Daily Ledger*, *Quincy Monitor*, and the *Boston Medical and Surgical Journal*.

J. WINTHROP SPOONER, President.

JOHN F. WELCH, Secretary.

METEOROLOGICAL RECORD,

For the week ending February 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer		Relative humidity.		Direction of wind.		Velocity of wind.		Wet't'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..18	30.00	43	51	35	86	46	66	S.W.	N.W.	26	18	0.28
M..19	30.04	40	47	33	66	100	83	S.W.	S.	2	15	0.16
T..20	30.12	34	38	31	68	42	56	W.	W.	22	12	0.14
W..21	30.07	32	37	28	72	53	62	S.W.	N.W.	5	10	—
T..22	30.14	26	31	20	50	62	56	N.	S.W.	8	8	—
F..23	30.15	20	29	12	40	41	44	W.	N.W.	14	25	—
S..24	30.69	28	6	7	74	46	61	N.W.	N.W.	22	18	—
☞	30.17	34	22	—	—	—	62	—	—	—	—	.58

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 24, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.	
New York	1,891,306	330	350	20.04	20.04	8.66	2.40	7.35	
Chicago	1,438,000	404	178	11.72	15.36	4.80	.48	.74	
Philadelphia	1,115,562	444	180	11.55	17.64	5.25	1.05	2.10	
Brooklyn	978,394	372	126	14.58	24.20	7.20	1.08	1.35	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	240	80	5.04	21.42	2.62	1.68	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	87	34	7.14	21.42	2.38	1.19	—	
Cincinnati	305,000	—	—	—	—	—	—	—	
Cleveland	290,000	77	34	11.70	14.30	6.50	2.60	—	
Pittsburg	263,709	81	31	14.67	23.37	4.92	3.69	1.23	
Milwaukee	250,000	83	42	13.53	24.60	7.38	—	3.69	
Nashville	87,754	9	7	11.11	33.33	—	—	11.11	
Charleston	65,165	18	6	5.55	5.55	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	39	14	20.48	20.48	2.56	—	10.24	
Fall River	87,411	46	23	2.17	30.38	—	—	—	
Lowell	87,191	42	16	14.28	17.30	—	—	—	
Cambridge	77,100	24	10	37.44	8.32	16.54	8.32	—	
Lynn	62,666	22	3	4.55	4.55	—	—	—	
Springfield	48,684	12	1	8.33	8.33	—	—	—	
Lawrence	48,365	—	—	—	—	—	—	—	
New Bedford	45,986	24	7	8.32	16.64	—	—	—	
Holyoke	41,278	13	2	38.45	15.38	—	—	—	
Salem	32,233	12	5	8.33	—	8.33	—	—	
Brookton	32,140	12	1	—	25.00	—	—	—	
Haverhill	31,396	10	2	10.00	20.00	—	—	10.00	
Chelsea	30,264	11	2	18.18	9.09	—	—	—	
Malden	29,394	4	0	25.00	25.00	—	—	—	
Newton	27,566	6	0	—	16.66	—	—	—	
Fitchburg	27,146	—	—	—	—	—	—	—	
Taunton	26,972	12	2	—	—	—	—	—	
Gloucester	25,688	—	—	—	—	—	—	—	
Waltham	23,058	3	1	—	—	—	—	—	
Quincy	19,642	7	3	—	14.28	—	—	—	
Pittsfield	18,802	3	0	33.33	—	—	—	—	
Everett	16,565	5	3	20.00	—	—	—	—	
Northampton	16,331	4	0	—	—	—	—	—	
Newburyport	14,073	5	1	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 3,030: under five years of age 1,149; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 430, acute lung diseases 577, consumption 342, diphtheria and croup 183, measles 61, scarlet fever 48, typhoid fever 31, cerebro-spinal meningitis 29, whooping-cough 28, diarrhoeal diseases 23, erysipelas 17, small-pox 6.

From typhoid fever Chicago 8, Philadelphia and Lowell 4 each, New York and Pittsburg 3 each, Brooklyn 2, Boston, Milwaukee, Worcester, New Bedford, Chelsea and Malden 1 each. From cerebro-spinal meningitis Chicago 7, New York and Brooklyn 6 each, Holyoke 2, Washington, Cleveland, Worcester, Lynn, New Bedford, Chelsea, Pittsfield and Everett 1 each. From whooping-cough New York 9, Philadelphia 7, Chicago 3, Brooklyn and Boston 2 each, Washington, Pittsburg,

Milwaukee, Fall River and Somerville 1 each. From diarrhoeal diseases New York 8, Chicago 6, Philadelphia, Lowell and Cambridge 2 each, Brooklyn, Boston, Washington, Worcester and Marlborough 1 each. From small-pox New York 5, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending February 17th, the death-rate was 18.7. Deaths reported 3,747; acute diseases of the respiratory organs (London) 340, whooping-cough 133, diphtheria 86, measles 74, scarlet fever 49, diarrhoea 42, fever 29, small-pox (Birmingham 7, Bradford 2, West Ham 1) 10.

The death-rates ranged from 11.2 in Croydon to 27.0 in Wolverhampton; Birmingham 16.9, Bradford 16.5, Burnley 17.8, Hull 18.9, Leeds 17.4, Leicester 16.0, Liverpool 25.4, London 18.6, Manchester 22.2, Newcastle-on-Tyne 18.8, Nottingham 14.9, Portsmouth 17.1, Sheffield 16.8, Sunderland 19.9, West Ham 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 24, 1894, TO MARCH 2, 1894.

Leave of absence for twenty days, to take effect upon the adjournment of the Eleventh International Medical Congress to be held at Rome, Italy, March 29 to April 5, 1894, is granted COLONEL BERNARD J. D. IRWIN, assistant surgeon-general, U. S. A.

A board of medical officers to consist of MAJOR JOSEPH K. CORSON, surgeon; MAJOR WALTER REED, surgeon; CAPTAIN JULIAN M. CABELL, assistant surgeon, is, by direction of the Secretary of War, appointed to meet at the call of the President thereof, at the Army Medical Museum Building, in this city for the examination of FIRST-LIEUT. PHILIP G. WALES, assistant surgeon, to determine his fitness for promotion.

FIRST-LIEUT. WALES will report in person to the President of the Board at such time as he may designate.

By direction of the President, the retirement from active service on the 25th of February, 1894, by operation of law, of CAPTAIN GEORGE T. BEALL, medical storekeeper, under the provisions of the act of Congress, approved June 30, 1882, is announced.

The leave of absence granted CAPTAIN REUBEN L. ROBERTSON, assistant surgeon, U. S. A., is extended one month.

MAJOR JOHN BROOKE, surgeon, U. S. A., retired from active service February 22, 1894.

FIRST-LIEUT. ASHTON B. HEYL, assistant surgeon, relieved from duty at Fort Niobrara, Nebraska, ordered to Columbus Barracks, Ohio, for duty at that depot, on the arrival of FIRST-LIEUT. THOMAS S. BRATTON, assistant surgeon, at Fort Niobrara, Nebraska.

The leave of absence on surgeon's certificate of disability granted MAJOR EDWARD B. MOSELEY, surgeon, U. S. A., is extended one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 3, 1894.

RICHARD ASHBIDGE, passed assistant surgeon, dismissed from the Naval Service, February 28, 1894, by the President's approval of the sentence of General Court Martial.

A. G. CABELL, passed assistant surgeon, ordered to the U. S. S. "Michigan."

J. S. SAYRE, passed assistant surgeon, detached from the U. S. S. "Michigan" and ordered to the Naval Hospital, New York.

R. G. BRODERICK, assistant surgeon, detached from the Naval Laboratory and Department of Instruction, and ordered to the Naval Hospital, Mare Island, Cal.

THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

The fourth annual meeting of this Association will be held in Washington, D. C., May 1, 2 and 3, 1894.

This National Organization is composed of medical officers of the U. S. Army, U. S. Navy, National Guard of the United States and the Hospital Marine Service. The afternoon of one day will be set apart for an object lesson from the "Manual of Drill," by the Hospital Corps. The evenings will be given up to social entertainments.

GEO. HENDERSON, *Chairman Com. of Arrangements.*

NICHOLAS SENN, *President.*

EUSTATHIUS CHANCELLOR, *Secretary.*

THE COLORADO STATE MEDICAL SOCIETY.

TO THE MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

Members of the American Medical Association are cordially invited by the Colorado State Medical Society to stop over in Denver on returning from the coast and attend the meeting of the Society convening on June 19th and continuing through the 20th and 21st.

Members who expect to return via Denver are invited to correspond with the Secretary, that invitation to participate in the programme and proper entertainment may be arranged.

EDMUND J. H. ROGERS, *President.*

A. STEWART LOBINGIER, *Secretary*, Barth Building, Denver.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, March 12, 1894, at 8 o'clock, P. M.

Dr. W. F. Whitney: "Circoid Myxoneuroma of the Tongue," illustrated by lantern slides.

Dr. C. W. Townsend: "Mild Forms of Nasal Diphtheria." Discussion opened by Drs. A. L. Mason and J. H. McCollom.

Members are requested to show interesting cases and pathological specimens.

JOHN T. BOWEN, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, March 14th, at 8 o'clock, by Dr. John Homans. Subject, "Ovariectomy." Physicians are cordially invited.

RECENT DEATHS.

JOEL SNAVERNS, M.D., M.M.S.S., died in Roxbury, March 1st, aged sixty-five years. He was born in West Roxbury and graduated from Harvard College in the class of 1850, of which he has since been secretary. He received his degree of M.D. from the Medical School in 1854. During the war of the Rebellion he was acting assistant surgeon from May, 1862, to December, 1863, when he was commissioned assistant surgeon of the U. S. Volunteers. In 1864 he was promoted to be surgeon and in 1865 was made Brevet Lieutenant-Colonel for faithful and meritorious service. He had charge of the hospital ships *The New World* and *De Molay* and was for some time post surgeon at Fort Warren in Boston Harbor. Since 1866 he has been in active practice in Roxbury. He was for some years a member of the Boston School Committee and has been actively interested in the work of secret societies, being Medical Examiner-in-Chief of the Royal Arcanum. He has been a Councillor of the Massachusetts Medical Society and President of the Norfolk District Society. He was a man of scholarly habit, keen perception and quiet, unostentatious execution. His literary work was marked by wide research, careful criticism and a clear, attractive style. He won the professional respect as well as friendship of those who were his colleagues.

WILLIAM JOHN GORDON FOGG, M.D., M.M.S.S., died in South Boston, February 27th, aged forty-three years. He graduated from Harvard College in the class of 1873 and from the Medical School in 1876.

JAMES PARRISH, M.D., died in Portsmouth, Va., January 21, 1894. He was a member of the Medical Examining Board and of the State Board of Health of Virginia.

BOOKS AND PAMPHLETS RECEIVED.

Annual Reports of the President and Treasurer of Harvard College, 1892-93. Cambridge: Published by the University. 1894.

Manual for the Use of Boards of Health of Massachusetts, Containing the Statutes Relating to the Public Health, the Medical Examiner Laws, the Laws Relating to the Registration of Vital Statistics and the Decisions of the Supreme Court of Massachusetts Relating to the Same. Prepared by direction of the State Board of Health. Boston: Wright and Potter Printing Co., State Printers. 1894.

Lectures on Auto-Intoxication in Disease, or Self-Poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics, Member of the Academy of Medicine, and Physician to the Hospital, Paris. Translated, with a preface, by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, Newcastle-on-Tyne; and Examiner in Physiology, Conjoint Board of England. Philadelphia: The F. A. Davis Co. London: F. J. Rebman. 1894.

Original Articles.

THE TREATMENT OF PREGNANCY COMPLICATED BY HEART DISEASE.¹

BY GEORGE G. SEARS, M.D.,

Physician to Out-Patients, Boston City Hospital.

In reporting the following case I realize that I may lay myself open to severe criticism for hasty action, but I hope to prove that the course adopted was chosen only after full consideration had shown it to be the best method of meeting a complication of pregnancy, whose gravity is universally recognized, but whose treatment seems to have been most inadequately dealt with in the text-books.

The patient was sent to me by Dr. George Haven, in 1889, when she was twenty-one years old, for the relief of cardiac symptoms of over three years' duration. There was no rheumatic history, but she had had both scarlatina and diphtheria as a child. There was little oedema of the feet, considerable dyspnoea on exertion, cough and slight hæmoptysis. The cardiac dulness extended about one finger's breadth to right of sternum, while the apex was in the fifth interspace just within the mamillary line, where a loud presystolic thrill could be heard and felt. She improved greatly under treatment, and after a few weeks discontinued her visits; so that I saw nothing more of her until November, 1892, when she again appeared for advice.

During the intervening three years she had been fairly well; but on several occasions after exercise she had had "fainting spells," which were preceded by severe cardiac pain. During the early part of the summer she had overexerted herself in preparation for her marriage, which took place in August. Her catamenia, which in July were attended by an excessive flow, occurred last on August 27th, since when she has been gradually losing ground, cough and dyspnoea having slowly increased. Hæmoptysis now frequently occurred, vomiting had become very troublesome, and she was very anæmic. Always nervous and somewhat hysterical, her condition had become greatly aggravated by the recent death of a friend during labor, from some cardiac complication, and she was haunted night and day by fear of a similar fate.

The lateral area of cardiac dulness had somewhat extended, as compared with the last examination; and in addition to the presystolic, a short systolic murmur was at times heard a little to the left of the apex beat. Except for oedema of both bases, the lungs were normal, and there was no swelling of the extremities. The urine had a specific gravity of 1.022 and contained a very slight trace of albumen. The pulse was regular but very small and easily compressed. While at rest its rate was only 78, but on the slightest exertion it rose to over 100. Dyspnoea was so great that she spoke only in disjointed phrases, pausing after every few words to catch her breath.

After a month's treatment by rest in bed, a restricted diet, digitalis and tonics, her condition became somewhat better, vomiting grew less frequent, and the pulmonary oedema cleared up; but as the dyspnoea improved but slightly, and the pulse made no gain in strength, I asked Dr. Haven to see her with me.

After a thorough discussion of the case, it was de-

cided to induce abortion; and on December 12th Dr. Haven dilated the cervix and packed the womb with iodoform gauze, this method being chosen in preference to an immediate evacuation as, with her extremely weak pulse, we feared the effects of etherization on the heart. Two days later the packing was removed, and a four months' foetus found in the vagina, the discomfort of the patient having been very slight. Recovery was uneventful, but her later condition has been such as to confirm the wisdom of our action. She is able to come into town occasionally to report, but can walk only at a very slow pace, and has since had several attacks of pulmonary oedema, in which her condition was critical.

To briefly recapitulate, the problem which confronted us was this: a patient with a double mitral lesion, between three and four months pregnant, who has had for several years alarming symptoms of failure of compensation, and in whom the slightest exertion, after a month's careful treatment, upsets the cardiac balance, is called upon, after passing through a further period of five months, during which increased demands are physiologically made on the heart, to meet the tremendous muscular strain of parturition; What advice should be given her? Or rather, to put the question in more general terms, What advice should be given to any pregnant woman with heart disease? Should she be allowed to proceed toward term, her strength being carefully supported and her progress watched with the possibility always in view of terminating pregnancy if her condition becomes desperate, or should she be at once delivered? Mortality statistics drawn from published cases make the outlook for these patients very bad when nature is allowed to take its course; for Porak,² out of 92 cases, found a death-rate of 38.09 per cent.; and Remy,³ out of 118, found one of 33.8 per cent. Of 77 cases collected by Wessner, 38 died, or 37 per cent. As all these series contain a number of identical cases, including McDonald's, a close similarity in the ratios was to be expected. More recently, Schlayer has reported 25 cases with 10 deaths, and Leyden 20 cases with 11 deaths. Of 30 cases which I have collected, not included in the above, 10 died. These percentages are based upon the number of women, not on the number of pregnancies, and are drawn almost entirely from severe cases, and may therefore approximate the average death-rate when serious symptoms have appeared. That they overestimate the actual mortality in the rank and file of cases is proved by every-day clinical experience, which shows that a large proportion of them pass through pregnancy and labor without the development of any evidence of serious cardiac embarrassment, or even at times of any signs whatever which lead the patient to suspect her disability.

One of these seems of sufficient interest to briefly report, not only on account of the number of pregnancies successfully weathered, but also because the ultimate fate of the children corroborates the grave prognosis which is given of their chances of surviving to adult life. The lesion was one of mitral regurgitation and stenosis. The patient, Mrs. C., thirty-two years old, had had three attacks of chorea as a child, but no distinct history of rheumatism. Between the ages of eighteen (when she was married) and twenty-seven she had six children, and one miscarriage at three

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, January 17, 1894.

² Thèse de Paris, 1880.

³ Thèse de Nancy, 1880.

months. The first pregnancy was uneventful, no trouble being suspected with her heart, but the second was attended by many stormy symptoms. She then received treatment for the cardiac condition and had much less difficulty with the next three, breathlessness and œdema, however, being more or less troublesome in each; but in the sixth her condition was such that the gravest apprehensions were felt as to her recovery, and the last few weeks were spent propped up in a chair. The labors were all rapid and easy, being terminated within an hour. The third child alone survives, the others all dying within a few months after birth.

For the sake of simplifying the original question cases of pregnancy complicated by heart-disease may be divided, with reference to treatment, into three classes, according to the severity of the symptoms: the first including all cases where they are wanting or slight, the second those in which they are so severe that the condition of the patient is desperate, and the third those which occupy a position midway between the two. The treatment of the two former may be dismissed in a few words. In the first, general supervision over the patient's manner of life, with the administration of tonics, will probably be all that is required to bring the case to a successful termination, or, at most, it may be necessary to hasten delivery should danger arise from too prolonged a labor. In the second class, the condition of the patient is already so critical that the induction of abortion may seem to give the only chance, though even here a timely venesection may change the aspect of the case, as it has done in several recorded instances, in one or two of which it was repeated several times. In the third class, to which the first case reported above belongs, as well as most of those in which the statistics previously given are based, where the patient still has several months before her, and symptoms have developed which either do not yield, or only partially so, to appropriate remedies, conditions are much more complex; and the question of treatment, whether by hopelessly waiting for nature to act, or by sacrificing the child in the interest of the mother, can only be decided in an individual case by the most careful study, both of her material circumstances and of her previous history and present physical condition, so far as they bear on the probability of an easy or difficult labor, and the preservation or loss of cardiac compensation. Many of these are fully discussed in text-books on heart disease and midwifery; so that only those need be mentioned in which the two conditions react upon each other, although the advantages of general good health and the ability to command every necessary attention may be referred to, as two such circumstances had considerable influence in determining us to induce abortion. These were the intense anxiety caused by the death of a friend under similar circumstances (which was alone exhausting her strength), and her suburban residence (which prevented prompt medical attendance should it have been suddenly demanded). The following points, however, deserve special consideration, namely, the site and gravity of the lesion, the time at which it was acquired, its stationary or progressive character, the period of the present pregnancy at which serious symptoms developed, and, in multiparæ, the history of previous pregnancies and labors.

As was to be expected when dealing with a class of patients, most of whom are under forty, and all of

whom are women, statistics show that mitral disease largely predominates. Thus, out of Porak's 92 cases, there were 22 instances of mitral regurgitation, with 8 deaths; 13 of mitral stenosis, with 8 deaths; and 22 of combined mitral lesions, with 10 deaths; in all, 57 cases, with 21 deaths. There were 13 cases of aortic lesions, with 8 deaths; while of 22 cases of complex lesions, 11 died. Remy found 29 cases of mitral insufficiency, with 6 deaths; 19 of mitral stenosis, with 11 deaths; and 15 of double mitral lesions, with 6 deaths; a total of 63 cases, with 23 deaths. Of the aortic cases, there were 12 with regurgitation, of whom 2 died; while 2 with stenosis and 3 with a double lesion recovered (17 cases and 2 deaths). Of complex lesions he found 16 instances, with 3 deaths. Of the cases which I have collected, there were 14 of mitral stenosis, with 4 deaths; 1 fatal case of mitral regurgitation; and 2 with combined mitral lesions, both of the latter recovering. There were 6 aortic cases, with 1 death; and 7 of complex lesions, with 4 deaths. If these latter figures be added to those of Remy, as the larger of the two series just quoted, we find the mortality-rate to be as follows: mitral stenosis, 45.5 per cent.; mitral regurgitation, 28.33 per cent.; double mitral lesions, 35.5 per cent.; and complex lesions, 30.5 per cent. The mortality-rate of the pure aortic cases was but 13.67 per cent., but 3 out of 23 dying, in all of which the valve was insufficient.

As these figures are drawn from the same source as those previously given, the same criticism is applicable, that they represent serious cases only, but so far as any conclusion is justifiable, they show that mitral cases are more apt to terminate fatally than aortic of apparently equal severity, and those with mitral stenosis than those with regurgitation, a conclusion which has its value, though a slight one, in estimating the chances of an individual case.

The means of determining the extent of the cardiac lesion are not altered by the advent of pregnancy; but the point was well made by McDonald, that the probability of its being compensated is much enhanced if it is not of very recent origin, for if the muscular substance of the heart has had opportunity to hypertrophy till it is able to counterbalance the valvular defect, it will be much more liable to prove sufficient under the additional strain than when the double duty is thrown upon it all at once. The prognosis is also better if the first appearance of serious symptoms is postponed until the later months; but in estimating their gravity it is essential not to confound those which are due to the cardiac lesion with those which result from the profound impression sometimes produced by an uncomplicated pregnancy upon the maternal organism, and which, though threatening, may be expected to pass off after the third month.

With the development of the uterus and the growth of its contents, coincident changes in the circulatory apparatus take place, and lead to a physiological hypertrophy and dilatation of the heart, while alterations in the composition of the blood induce a form of anæmia and so impair the cardiac nutrition that fatty and other degenerations of the myocardium are not very infrequent. Such changes occur gradually, and are not usually sufficiently pronounced to give rise to symptoms of failing compensation till between the fourth and sixth months; so that, other things being equal, little reserve power in the heart may be inferred

if they appear before that time. The reverse of this proposition, however, that the later the development of symptoms the better the outlook, is only partially true, as cases are occasionally met with where the patient has passed through her pregnancy without exciting any special anxiety, and yet has suddenly died from œdema of the lungs during labor or even in the puerperium. At times, also, death results from post-partum hæmorrhage, a not very infrequent occurrence in these cases, though it is possible that its gravity is often overestimated since it may be a conservative effort of nature, especially in mitral disease, to relieve an over-distended right ventricle.

In multiparæ the histories of their previous experience may give much valuable information, as the tendency of the cardiac symptoms is to grow more severe with each succeeding pregnancy, owing to the extra burdens which have been thrown upon the heart, and also occasionally to fresh attacks of endocarditis, to which pregnant women seem peculiarly liable. But little doubt can exist of the necessity of inducing abortion if there is a history of extreme danger in the previous pregnancy of gravido-cardiac origin, or if, with serious symptoms in the present, the lesion is found to be progressive from a rekindling of the endocardial inflammation. As the period of greatest danger is during the expulsive stage of labor from the participation of the abdominal and other muscles, after the necessity of terminating pregnancy has been once determined, the sooner it is done the greater the chances for the mother, especially if the fœtus is still small and the expulsive force can be chiefly furnished by the uterus. The idea that the induction of labor may be held in reserve until the patient is in a condition of imminent peril and then be resorted to in the anticipation of accomplishing any great measure of relief, does not seem to be justified by facts. Schlayer⁴ says that all cases in which premature labor was brought on under these circumstances in one of the obstetrical clinics of Berlin, died either during labor or shortly after, and in the published cases also recovery followed only in rare instances.

Regarding the moral side of the question it must be admitted that the child is apparently sacrificed for the sake of a mother whose health is permanently impaired and whose expectation of life at best cannot be long, but it is a fair question whether too much importance has not been attached to it, if the ultimate fate of the child be considered, when nature is allowed to take its course. Charpentier says that abortion and premature labor are very frequent and the children who are born at term do not live long. So sweeping a statement cannot, of course, be taken without qualification, otherwise it would be an almost imperative duty to induce abortion at the first sign of danger, but he quotes Casanova as believing that in more than half the cases where more or less marked symptoms have manifested themselves pregnancy is not completed, and says that Duroziez noted twenty-one miscarriages among forty-one women with heart disease, and five deliveries at six months, while thirty-seven of the children who were born alive died before reaching five years.

I cannot refrain from referring to a case of advanced mitral regurgitation which I saw yesterday, as it appears to illustrate so well this point; yet it must be admitted that the fate of the fifth child may have been an

accidental coincidence. The patient was a woman about thirty-six years old, and had been pregnant six times, the first four children being still alive. After the birth of the third child she had an attack of acute rheumatism, from which the cardiac lesion in all probability dates, although no sign of it became manifest until the fifth pregnancy, when she suffered from cough, dyspnoea and other evidence of cardiac embarrassment, but was delivered at term after a very rapid labor. The baby died eighteen months later of some acute pulmonary affection, which was said to be pneumonia. During the sixth pregnancy she suffered from serious symptoms, and miscarried at the seventh month.

There seems to be little question that the mortality-rate among children born after serious cardiac symptoms have developed in the mother, is high, but statistics are meagre, as the child so often passes from observation after the lying-in period is over. The frequency of abortion or premature delivery, however, can be more closely approximated, though the opportunities for error in determining the ratio of this event are great, as in multiparæ it may be impossible to tell when the cardiac lesion first developed, and many of the earlier pregnancies may have been free from any cardiac complication. However this may be, Porak found that out of 214 labors 88 were premature, or 41 per cent.; while Remy, in 272 labors occurring in 112 women, found 87 premature, nearly 82 per cent., 51 taking place before the seventh month.

The fact that the death of the mother has not always occurred in apparently the most desperate cases, has probably had much to do in producing the conservatism which has heretofore prevailed. Yet it is not enough that the patient should come out alive, her future must also be regarded: and when one considers the loss of *morale* induced by the sense of her critical condition, the extra burden thrown by pregnancy upon a weakened heart, and the strain of parturition, so great that in a case of Simpson's rupture of the aorta occurred, it is not surprising to find that child-bearing has been the starting-point in many of these cases of a downward course soon followed by death, which was as much a result of it as though it had occurred before the puerperium was ended, but which, nevertheless, does not appear in the statistics.

I do not wish to be considered as holding a radical position on this question, nor as advocating so serious a measure as an abortion until other means have shown their probable futility, but would protest against allowing moral considerations to drive us into too great conservatism when the danger to the mother is so great and the future of the child so doubtful. I am inclined to believe that when the probable necessity for an abortion begins to be seriously considered, that in the long run we shall have less to regret if it is done immediately than if it is postponed till worse comes to worst under the delusive idea that it is an efficacious measure when employed as a last resort. Certainly after the seventh month, when the child is viable, the condition of the mother should be the chief guide for action.

The question of the advisability of marriage for women with valvular disease has been the subject of much ardent discussion. While it is true that many such patients have passed through numerous pregnancies without apparent harm, yet so many factors have to be considered, for whose estimation we have most insufficient evidence, that except for very unusual

⁴ Quoted in Sem. Méd., March 30, 1892.

cases Peters's dictum seems to be the safest guide, namely, that such women should not marry, that if they are married they should not become mothers, and if they are mothers they should not nurse their children.

The points which I have wished to emphasize may be summarized in the following propositions:

(1) That many women with valvular disease, even when situated at the mitral orifice, pass through repeated pregnancies without the development of serious symptoms, and at times without suspecting that they are victims of such disease.

(2) That as miscarriages are very frequent, and the chances of the child's surviving more than a few years are doubtful, if the mother's condition during pregnancy has been serious, the probable fate of the latter should take so much more prominence in deciding the question of abortion.

(3) That the necessity of inducing abortion is very probable if grave symptoms have appeared during the early months or are present with an advancing lesion, or if there is a history of extreme danger in the preceding pregnancy.

(4) That if the necessity for an abortion becomes apparent, the sooner it is done the better, while the fetus is still small and the expulsive force chiefly furnished by the uterus.

(5) That the hope that relief may be given when the case has become desperate by inducing abortion is delusive, as it is possible that it only increases the danger.

(6) That marriage should be forbidden, except perhaps in very unusual cases, to women suffering from cardiac disease.

SIX CASES OF EXTRA-UTERINE PREGNANCY.¹

ONE A PREGNANCY IN BOTH TUBES AT THE SAME TIME, WITH THE POSSIBILITY OF THERE ALSO BEING A TWIN PREGNANCY IN THE LEFT TUBE. — CELIOTOMY. — RECOVERY IN ALL.

BY F. W. JOHNSON, M.D.,

Visiting Gynecologist, Carney Hospital; Visiting Gynecologist, St. Elizabeth's Hospital.

CASE I. G. F., married, aged twenty-eight, consulted me on Tuesday, September 29, 1891. A diagnosis of extra-uterine pregnancy was made, and I operated on her at the Carney Hospital. The following is the history of the case and the result of the examination:

Dysmenorrhœa since puberty. The pain, situated in front and low down in the abdomen, comes on several days before the flow, and lasts throughout menstruation. For the past year has had quite severe pain in the right ovarian region when unwell. Flows five days. Flows quite freely. Leucorrhœa for years. Had always been regular to the day until August 9th. Instead of menstruating at this time, she went to August 16th, just one week over her time. August 16th flowing began, and continued, at times profusely, for two weeks. In two weeks the flowing again began, and has continued up to the present time. Since August 16th, when the flowing began, until September 20th, has had a dull pain in right ovarian region. The breasts have enlarged.

Sunday, September 20th, was suddenly seized with severe, cutting pain in right ovarian region. This

pain lasted one hour, and produced fainting. This severe pain was repeated September 28th, and lasted two hours. Formerly the pain in the right ovarian region was dull in character, but since the severe attack of pain it has been more cutting in character. From August 9th to August 16th, the week following the date of expected menstruation, there was a dull, heavy dragging-down in lower abdomen.

Examination. — From half-way between umbilicus and pubes, extending over the whole of the lower part of the abdomen, there was marked sensitiveness on pressure. By vagina, a soft mass, the size of the fist, excessively sensitive, was found in Douglas's pouch, and on this the uterus rested in a position of retroversion. Bright red blood flowed from the cervix. Uterus measured three inches in depth. Temperature 99°, pulse 110.

Operation. — On opening the peritoneal cavity, dark-colored blood welled up through the incision. The abdominal cavity below the incision contained fluid and clotted blood of a dark color, and no bright blood was found until the right tube and ovary were brought into view. A portion of the right tube towards the ovary was found dilated. This dilatation was about the size of a small English walnut, and from the upper part of it fresh blood oozed out through an opening the size of a pin's head. The right tube and ovary were ligated and removed. On the left side a cystoma of the ovary was found, and it, with the tube, was ligated and removed. The peritoneal cavity was thoroughly washed out with a salt solution, and the abdomen closed. About a quart of fluid and coagulated blood were removed. The mass in Douglas's pouch was composed of coagulated blood, and was dug out with the fingers. Convalescence was uninterrupted.

Twenty-three days after the operation she was discharged well. December 2d, she reported that she felt perfectly well.

Dr. Whitney's Report. — "The following is the description of the ovaries and tubes from the case of Mrs. G. F., received from you October 1, 1891:

"(1) Ovary and Tube. The portion of the tube measured about six and one-half centimetres. About two centimetres from the fimbriated end, which was normal, was a rounded enlargement measuring about two and one-half centimetres by two centimetres, dark red in color, and covered with shaggy, thin adhesions. About the middle of the nodule, opposite the side of the ligament, was a very small rent with a hemorrhagic, infiltrated edge. The remainder of the tube, about two centimetres, was of normal size and calibre. Sections made through the nodule, and examined microscopically, showed the greater part to be made up of blood clotted among small, villous projections, fibrous in character, and covered with a low epithelium, similar in every way to the villi of an immature placenta. Just beneath the outer surface were large and very thin-walled vascular sinuses. The cavity of the tube was dilated, and its lining membrane was apparently reflected up on to the mass of blood and villi; but whether it was continuous entirely over it could not be determined. Apparently, however, it was not. From the distal end of the nodule there opened a distinct diverticulum from the tube, which could be followed almost to the fimbriated end, where it stopped. The relations were such as to show that the nodule had developed entirely in the main tube, and not in the diverticulum. In none of the sections was there

¹ Read before the Obstetrical Section of the Suffolk District Medical Society, December 28, 1893.

any evidence of a fœtus found. The ovary attached to this tube measured two by two and one-half centimetres, was irregularly shaped, and from one place a reddish nodule projected, which, on section, showed an irregularly festooned outline enclosing a yellow mass of large cells (corpus luteum).

“(2) Tube and ovary. The piece of tube measured about six centimetres, and was of normal size and structure. The ovary measured about three by four centimetres, and was mostly made up of a cyst, filled with thin fluid, extending deeply into the hilus, where there was a layer of ovarian tissue gradually thinning out over the cyst.

“The case is one of tubal pregnancy with rupture. There are no positive data as to the length of time, but from its size it is probably within two months.”

CASE II. B. K., married, aged twenty-eight, entered the hospital September 30, 1892.

Menstruation began at thirteen. Regular every four weeks. (Eleven years ago went three months without menstruation.) Flows five or six days. Flows very freely. No dysmenorrhœa. Three children. No abortion. First confinement October 1, 1889. Last confinement March 1, 1892. Nursed her child up to the time of entering the hospital. She had had a bloody discharge from the vagina for four weeks. This had increased very much since the last of August. Since the flowing began there had been bearing-down pains in the back, side and abdomen. There had been interrupted, sharp pains in the left ovarian region for three weeks. Urine and defecation caused pain in left ovarian region.

Examination showed a large movable tumor on the left side, in the region of the left broad ligament.

Operation, October 10th. On opening the peritoneal cavity, a large, grayish-white cyst presented. Eleven and one-half pounds of dark, bloody-looking fluid were removed by tapping. At the upper part of the cyst inside, there was a solid mass as large as a goose's egg, which was papilloma. Directly opposite this, on the outside of the cyst wall, the mesentery, omentum and intestines were adherent. No papillomatous disease could be seen on intestine or omentum. The pedicle was tied, cut and cauterized. There was an hæmatocele between the layers of the left broad ligament, containing eight to ten ounces of dark, clotted blood and debris. This was emptied, and as much of the broad ligament as possible was tied off and removed. The cavity was washed out with salt solution and packed with sterilized gauze to stop the bleeding, which was quite free. The right tube and ovary looked healthy, and were left. So much shock, lasting for hours, followed the operation that the gauze was not removed for forty-eight hours. In consequence, a sinus was left; otherwise her convalescence was perfect.

Dr. Whitney's Report.—“The specimen consisted of a portion of the tube and ovary, with a considerable mass of dark, clotted blood. The specimen was considerably torn, and the relations were not readily evident to the eye. Microscopical examination showed the tube to be normal wherever seen; but the layers of the ligament were infiltrated with blood, and there were numerous newly-formed vessels and thin-walled sinuses. A few large, flat cells were found mingled with the blood-clot, recalling the so-called decidua cells. A definite diagnosis cannot be made in this case from the histological condition.”

CASE III. H. J. O., married, thirty-eight years of age, was operated on October 17, 1892. Had had three children. One abortion with twins, eight years ago, at five months. Two living children since. Menstruation began at sixteen. Always regular every four weeks. Flows seven to eight days. Always flowed excessively, soaking twenty-five to thirty napkins. Until birth of first child had severe dysmenorrhœa, beginning with the flow and lasting the first day. Since first confinement absolutely free from all pain at menstrual periods. Last child was born November 12, 1891. Good getting-up, except that it took her a long time to get her strength. There was a bloody discharge from the vagina for three weeks after confinement. There had been a great deal of leucorrhœa since marriage. March 6th, four months after confinement, menstruation returned. Flowed eight days. No pain. Flowed profusely. Unwell every five weeks until the menstrual period was due in October. When four days over her time, October 10th, was taken with severe pain in the lower abdomen. Fell to the floor, and was unconscious for several minutes. Large doses of morphine were required to relieve the pain. The face was pale, and she felt faint and was very thirsty. Wednesday, October 12th, she was taken with severe pain in both ovarian regions, and begun to flow. There was but a show, and the pain lasted but five minutes. There was no return at all of a bloody vaginal discharge. Saturday, October 16th, during the evening, she had a return of the severe pain in the lower abdomen. She grew very pale, felt faint, and was thirsty. The pain lasted one hour, although morphine was given twice. Monday, October 17th, during the forenoon, she was seized with severe pain in the lower abdomen. As before, she grew pale, felt faint, and was very thirsty. On the arrival of the family physician, Dr. E. S. Boland, the feet, hands and nose were cold. The face was white, the lips colorless. She was restless, with now and then sighing respiration. Temperature 99°; pulse 120. Dr. Boland made a diagnosis of internal hemorrhage, probably a ruptured extra-uterine pregnancy.

Dr. Fogg saw her in consultation, and agreed with Dr. Boland. I saw her with Dr. Boland a few hours after the onset of the pain and collapse. Reaction had set in. The temperature and pulse were normal. The severe pain in the abdomen had ceased, although there was marked tenderness on pressure over the abdomen below the umbilicus. Resonance was present, but over the right ovarian region there was slight dulness. On the right side, nearly on a line with the umbilicus, there seemed to be a line of resistance, but this was less marked when the patient was etherized. Nothing could account for the symptoms more perfectly than an ruptured extra-uterine pregnancy. She was sent into St. Elizabeth's Hospital, and a coliotomy was done as soon as she reached there. The abdomen was full of blood, fluid in the region about and above the incision, clotted in the lower abdomen and Douglas's pouch. Owing to the dulness over the right ovarian region I expected to find the rupture on the right side; but it took but a minute or two to run the right tube between the thumb and finger, and thus prove that there was no rupture on the right side. On feeling for the left tube, the fingers came in contact with a shaggy mass. On drawing this up to the incision the rupture in the tube was seen, from which was squeezed out an embryo in an unbroken sac filled with clear fluid. It

was a beautiful specimen. The right tube and ovary were not removed. On entering the hospital the temperature was 100°, and the pulse 115. Owing to her very weak condition, no attempt was made to wash out the peritoneal cavity. The clots and fluid blood that could be easily reached were sponged out. No drainage. For hours after the operation, shock demanded constant attention. Her recovery was uninterrupted, and she was discharged twenty days after the operation.

Dr. Whitney's Report. — "The specimen consisted of about six or seven centimetres of the Fallopian tube with the ovary attached, and an embryo about three centimetres long in an unbroken sac filled with clear fluid. About two centimetres from the fimbriated end the tube was dilated into an egg-shaped enlargement about three centimetres in its longest diameter. The free surface was torn, and from this a shaggy tissue infiltrated with blood projected. Microscopic examination showed this to be made up of branching fibrous filaments (chorionic villi). The ovary, to which the end of the tube was slightly adherent, contained a large corpus luteum."

CASE IV. S. F., married, aged twenty-nine, entered the hospital November 20, 1892. Has had seven children, the youngest being six years old. Nine years ago had two miscarriages at about six months. Ten years ago miscarried at eight months. After her first labor had puerperal trouble of some kind, and was in bed seven weeks. From her first pregnancy until six years ago never menstruated, as she was either pregnant or nursing. Since then she has been regular every thirty days. Has flowed two to three days, and the amount has been small. Constant leucorrhœa since her last confinement. Last unwell four months ago. During the first two months of this period had no trouble except "morning sickness." Then came loss of appetite, epigastric pain and constipation. Six weeks ago begun to have attacks of sharp pain in the lower abdomen, chiefly in the left ovarian region. About this time a bloody discharge made up of fluid blood and clots begun from the vagina. The abdomen was distended, and everywhere below the umbilicus it was sensitive to pressure. Pulse and temperature were elevated. She had lost much flesh and strength. By vagina, a soft elastic mass, the size of a small orange, was felt in the right ovarian region. On opening the peritoneum dark-colored blood welled up. There was a large quantity of fluid blood and clots in the abdominal cavity, but it was dark-colored. On pressing the hand down to the right tube, an embryo, head presentation, was grasped, and drawn out of a rent in the tube. When placed on the table, it moved. Both tubes and ovaries were removed. The peritoneal cavity was thoroughly washed out with a salt solution. No drainage. She made a good recovery.

Dr. Whitney's Report. — "The specimen consisted of both ovaries and tubes. The right tube measured about ten centimetres in length. The outer eight centimetres of this was occupied by a flattened oval enlargement about six centimetres in diameter. On the free border there was a small opening with a hæmorrhagic, infiltrated edge connected with an irregular rent (made by the finger at the time of operation). This opened into a cavity lined by a smooth membrane. Microscopic examination showed the lumen of the uterine end of the tube partially closed by a fibrous mesh-work, the partitions of which were covered on

either side by a layer of columnar epithelium. The enlarged part of the tube showed villi of the chorion mixed with blood-clot. The embryo which came with this measured seven and five-tenths centimetres. The ovary connected with this measured two centimetres, contained a small dark cyst, and a large corpus luteum. The other tube and ovary showed little change from the normal."

CASE V. W. W. R., married, aged twenty-four, was sent to me by Dr. J. F. Croston, of Haverhill, January 24, 1893. The following is the history of the case:

Never pregnant. Menstruation began at thirteen. Regular every five weeks. Flows seven days. Flows moderately. Never any dysmenorrhœa. September 11th menstruation began, but the quantity was less than usual. Seven weeks after this menstrual period she was seized with severe, excruciating pain in the lower part of the abdomen, in the median line, extending through to the back, and vomiting. The pain lasted one hour. In two weeks the pain and vomiting returned, and lasted two hours. Between these attacks there was nausea and vomiting, but they were not confined to the morning. The third attack came on ten days after the second. When three months over her time ptalism began, and lasted six weeks. The fourth attack came on twelve days after the third. The fifth attack began seven days after the fourth, and was accompanied with a show. November 26th, pain with flowing. December 3d, began to flow quite freely. Went to bed, and flowed one week. December 10th, severe pain and profuse flowing, followed by collapse. Four weeks later, with no flowing, passed a "cast of the womb." Stayed in bed until January 10th. No flowing since the collapse. Sore feeling in the left ovarian region. If pregnant, would be four plus months. Nausea and vomiting lasted until the cast of the womb came away. Six years ago she was in bed six weeks with peritonitis, and has had several less severe attacks since.

The history of the case was so typical that I made a diagnosis before examining her.

A smooth, elastic tumor was found behind and to the right of the uterus. Uterus was quite firmly fixed. The examination caused considerable pain.

Sunday, January 29th, the abdomen was opened. There was no blood in the abdominal cavity. Between the layers of the right broad ligament there was a tumor the size of an orange. I tried to tie off the ligament so as to remove the tumor intact, but I was unable to get more than half round owing to very thick abdominal walls, and a poor light. A hole was then dug through into the tumor, which contained a foetus, placental tissue, and blood. The cavity in the broad ligament was thoroughly cleaned out with fingers and sponges, then washed out, and packed with gauze to arrest the oozing. The tube had ruptured on the under side, and the ovum, as it grew, made for itself a place between the layers of the broad ligament. A small cystoma was removed from the left side. The tube and ovary in the right side were removed. She returned home in about three weeks. Menstruation returned two months after the operation, and has been regular every four weeks.

The foetus was given to Dr. Whitney, who was present at the operation.

The blood and *débris* had begun to break down, and had so softened the foetus that it was not preserved.

With some difficulty the sex was made out. This would bring the age of the fetus up to about the fourth month.

CASE VI. This is the only case on record, as far as could be found in the literature on the subject, of pregnancy in both tubes at the same time.

Mrs. H., aged thirty-six, entered the Carney Hospital November 16, 1893. No children. Had aborted three times at about two months. There had been an interval of about one year between each abortion. Last abortion two years ago.

Menstruation began at sixteen. Always regular. Flows three to four days. Uses five to six napkins. Only slight discomfort when unwell.

October 25th, having gone six weeks without menstruating, passed a small blood-clot. "Labor" pains were present to a slight degree, being mostly in front. October 27th, had a severe attack of colicky pain in the lower abdomen, obliging her to go to bed. The pain was severest in the right ovarian region and extended up the side under the ribs. This pain was relieved by applications of heat. There was slight flowing. October 28th, she was up and about. October 29th, the severe pain again returned, and she was obliged to stay in bed until November 1st. During this time she was in constant pain. On getting up November 1st, she was seized with severe colicky pains in the lower abdomen and fainted. At this time she began to flow quite freely, and had a "pressing-down" feeling in the rectum. From this time until November 16th she was in bed. The pain was less, but at times it was severe and of a colicky nature. Examination showed an enlarged uterus (four inches in depth), chronic endometritis, a smooth elastic mass in the left ovarian region, and a soft boggy feeling mass in the right ovarian region.

Operation.—The uterus was first thoroughly curetted. About one-half pint of dark-colored fluid blood was found in the peritoneal cavity. On the right side a ruptured tubal pregnancy was found, and it was from this rupture that the hemorrhage had taken place. The dilatation of the tube was at the fimbriated end. On the left side the fimbriated end of the tube was occupied by another extra-uterine foetation. This was removed unruptured. Both tubes and ovaries were ligated and removed. The abdominal cavity was thoroughly washed out. No drainage. Her convalescence was uneventful.

Dr. Whitney's Report.—"The specimen from the case of Mrs. H., removed by you at the Carney Hospital, November 21, 1893, consisted of a portion of both Fallopian tubes with the ovaries attached.

"(1) Right tube and ovary.

"Tube. A piece about five centimetres long had been removed. This was about normal for one centimetre from the cut end, when it suddenly enlarged to a dark-red, egg-shaped mass, four by three centimetres in diameter. The fimbriated end was drawn up against the swelling and spread out upon its surface. There was no free blood coming from it. The surface of the mass was marked by small, arborescent, injected blood-vessels, and was more or less covered by a thin layer of dark, coagulated blood.

"The right ovary measured four by two centimetres, was flattened and very much corrugated, and covered on the surface by thin, quite adherent blood coagula. At the end nearest the fimbriated end of the tube was a yellow opaque body with a more or less convoluted

outline. This measured about one centimetre in diameter.

"Microscopic examination showed that the blood-clot contained thread-like masses, which were evidently villi of a chorion.

"(2) The left tube and ovary.

"Tube. About four centimetres had been removed. The cut end was normal, and the tube continued so for about one centimetre, when it dilated into an irregularly rounded mass about two and a half centimetres long by one and a half in diameter. It contracted again just before the fimbriated end, which was normal. The surface of the enlargement showed injected arborescent vessels like the other, and was also roughened by thin adherent coagula. But quite close to the fimbriated end was a rounded projecting clot about one centimetre high, which section showed to be directly continuous with a dark-red mass filling the interior of the tube. Section through the tube showed a small blood-clot in the wall of the tube near the uterine end, which contained numerous small, branching villi, like those of the chorion. This clot was continuous into the cavity of the tube. The clot which projected from the surface was not connected with this one in any way, and was a perfectly independent affair, which had passed entirely through the wall of the tube. In this were structures recalling very poorly-formed chorionic villi.

"The left ovary measured four and a half by two centimetres, and was of the same flattened and corrugated shape as the right. Its surface was also covered with blood-clot and some fibrous adhesions. At the end next the fimbriated end of the tube was a corpus luteum one centimetre in diameter. The other end of the ovary was occupied by a cyst with bloody contents, the size of a small cherry.

"January 5, 1894. Further study of this remarkable specimen is necessary. But as far as the investigation has gone, it shows with certainty the fact of a pregnancy in each tube, with the possibility of their also being a twin pregnancy in the smaller tube. It is probable that the age of the pregnancy in the two tubes is not the same."

(1) The cause of extra-uterine pregnancy seems to be due to an absence of the ciliated epithelium in the tube. This condition allows the spermatozoa to ascend the tube and there meet with the ovum. It also retards the ovum in its downward migrations. This theory will not hold if the modern idea is true, namely, that *normally* impregnation takes place in the tube.

(2) All extra-uterine pregnancies are primarily tubal, the point of rupture and circumstances determining the variety that will be found after the rupture, provided gestation goes on after rupture takes place.

(3) Rupture of the tube takes place when the limit of its expansibility is reached, and this is usually between the second and third months of pregnancy, usually at the second month.

(4) In this class of cases there should be no delay in opening the abdomen.

NEW POTENCIES FOR PERMANGANATE OF POTASH.

Potassium permanganate of potash is fast becoming a popular antidote for all kinds of poisons. Not only is it efficacious against snake-bite and morphine, but now an Alsatian, M. J. Anstal, claims that it acts as an antidote for phosphorus, muscarine, strychnine, colchicine, oil of sassafras and oxalic acid; at least in dogs, rabbits or frogs.

CASES OF EXTRA-UTERINE PREGNANCY, WITH OPERATIONS.

BY J. W. ELLIOT, M.D.

CASE I. Unruptured tubal pregnancy.

This case was reported in part in the *Boston Medical and Surgical Journal*, February 2, 1893, by Dr. Prior, of Malden, with whom I saw it. An abstract is here included to make my report complete.

The patient, aged thirty-five, was married to a second husband. She had had pelvic peritonitis several years before her present illness. She finished a normal menstruation at the end of June, 1891. About six weeks later, at the end of August, she had a show of blood, which lasted a day or two and ceased. This sort of flowing continued intermittently to the end of September. She had the same pain she usually had at regular menstruation, and thought this was simply a prolongation of that process.

She consulted Dr. Prior for a nose-bleed on October 18th. He found the uterus slightly enlarged, and the left Fallopian tube large and tender. One week later the flowing returned. She was put to bed with more pain and a temperature of 100°. There was no nausea.

I saw her, in consultation, on November 1st. There was a boggy swelling in the region of the left tube. The diagnosis was chronic tubal disease, either gonorrhœal or tubercular, with hæmorrhage from the tube coming out through the uterus. Extra-uterine pregnancy was considered and thought less probable.

Operation, November 25th. The abdomen being opened, the pelvic contents were found matted together by old and new adhesions. Both tubes were found inflamed and enlarged, especially at their outer ends, forming with the ovaries the so-called tubo-ovarian cysts. In dissecting out the left side I noticed that it was very vascular; four or five arteries spurted in different directions. When removed, this proved to be the unruptured sac of a tubal pregnancy. The patient made a good recovery.

The following is Dr. Whitney's report on the specimen:

"The specimen consisted of about three inches of the Fallopian tube with an ovary attached. The tube was of normal size and appearance, till close to the fimbriated end, where it suddenly dilated into a round mass about the size of a robin's egg. The color was a dark red, and the surface was slightly roughened.

"Sections made at right angles to the long axis of the tube showed greatly dilated and sinus-like blood-vessels among the clots, in which were portions of chorionic villi; and in the midst of the mass which occupied the centre of the tube an embryo, slightly curved, and measuring about four millimetres in length, which would place it between the eighteenth and twentieth days.

"In the ovary a well-marked corpus luteum with deeply festooned edges."

CASE II. Tubal pregnancy of five months' standing; rupture, causing pelvic peritonitis.

The patient, aged thirty-two, had been married several years, and had had no children. The catamenia had always been regular. In September, 1892, she passed her period, and had occasional nausea in the morning during the last of the month. Two or three weeks later she had an attack of pain in the abdomen, with flowing, and went to bed. After a fit of coughing a membrane came away from the vagina. The

flowing continued through October, and in November she had an attack of pain and tenderness in the abdomen. During December she felt somewhat better, but still had slight flowing and pain.

She entered the Massachusetts General Hospital January 30, 1893. She was well nourished, fat and ruddy. On examination, a tender, fluctuating mass was found on the right side of the uterus extending down into Douglas's fossa. There was also a smaller mass on the left side.

Operation, February 6th. The patient was placed in the Trendelenberg position. When the abdomen was opened, the pelvic cavity was found walled off from the general peritoneal cavity by old and new adhesions. When opened, it was found full of dark, clotted blood, with a quantity of shreddy, placental-looking tissue. The right ovary and tube dilated, tortuous and ruptured, was tied off and removed. The left tube, being diseased, was also removed. The pelvis was sponged out, and the abdomen closed with a glass drainage-tube in the pelvis. The patient made a rapid recovery.

Unfortunately, I have been unable to find the pathological report on this specimen, but have a record from the hospital, that it was evidently a case of ruptured tubal pregnancy of several months' standing.

CASE III. Tubal pregnancy; sudden rupture, with alarming symptoms and collapse.

The patient, aged thirty-two, was unmarried, but was exposed in the last of December, 1893, about one week after the cessation of a period. She then went five weeks without any menstruation. A flow then began, which continued each day for three weeks, and was always preceded by pain.

On February 11th Dr. Lena Ingraham examined the patient at her office, and made a diagnosis of extra-uterine pregnancy. The next morning the patient was suddenly taken with weakness and vomiting and a pain in her left side. The pulse became rapid, and she was in a critical condition. She was sent to the Massachusetts General Hospital on February 12th. When seen there she was pale, with sunken eyes and a bad expression. The abdomen was swollen and tympanitic, and slight pressure caused pain. The uterus was enlarged, and there was a fulness in Douglas's fossa. During the night she vomited frequently, and the abdominal tenderness and distention increased, but the pulse improved. February 13th, the patient looked badly, being of a yellowish-white color.

The operation was done in the Trendelenberg position. The abdomen was found full of black clotted blood. The bleeding came from the right tube, which was markedly dilated. The ovarian artery was enlarged. In the clots removed from the pelvis there was a little sac the size of a bean, which looked like an embryo, (unfortunately this was not examined microscopically). Both tubes and ovaries were removed. The abdomen was sponged out, and a glass drainage-tube placed in the pelvis.

The patient rallied from the operation, and made a slow recovery. One year after the operation she was found to be in excellent health.

The following is Dr. Whitney's report on the tubes removed: "The specimen consisted of both tubes and ovaries, and a mass of blood-clot, at one part of which was a more or less shaggy membranous patch. One tube and ovary presented nothing markedly abnormal. The other ovary had a portion torn away from it,

which on section was found to be a corpus luteum. The tube was thickened and dilated towards the fimbriated end. In the walls there were no greatly dilated blood-vessels or hæmorrhagic infiltration. The section through the clot showed masses of well-marked chorionic villi.

"Although there is no absolute microscopic evidence that the conception had taken place in the tube, still it is probable that the ovum developed there to a degree and then an abortion took place into the abdominal cavity, sufficient time having elapsed to allow retrograde changes to have taken place in the tube."

CASE IV. Tubal pregnancy; rupture, with serious symptoms.

The patient, aged thirty, entered the Massachusetts General Hospital in November, 1893. She had had two children, the youngest being six years old. Her catamenia had continued regularly throughout her second pregnancy. From that time on there had been no irregularity. The month before entrance the regular flow had been much more profuse than usual, and had been accompanied with darting, cutting pains in the lower abdomen. This pain had recurred every three to four days since that time. The week before coming to the hospital the pain had become very severe, and the uterus had been curetted. Catheterization then became necessary. She had had occasional slight chills, one quite severe. She thought herself three months' pregnant, and had cravings and a great appetite.

On examination the uterus was found to be somewhat enlarged, and there was a tender mass, the size of a fist, in Douglas's fossa. On the following day this mass was found to have filled the pelvis and to have extended nearly up to the umbilicus. The patient was suffering great pain, had a poor pulse and a very bad general expression. As Dr. Warren, in whose wards she was, happened to be out of town, I operated at once, fearing that any delay might be fatal.

The patient being placed in the Trendelenberg position the abdomen was opened by a large incision. The whole pelvis and lower third of the abdominal cavity was full of dark, clotted blood. This hæmatocele was walled off from the rest of the abdominal cavity by recent adhesions; the enlarged, flattened and much displaced uterus formed a part of this barrier. The adhesions were separated and the blood scooped out. The right tube, enlarged to the size of a lemon, and containing a mass of tissue and clotted blood had been ruptured. The other tube showed the effects of chronic salpingitis. They were both removed. The ligated pedicles were markedly oedematous. The blood cavity was sponged out, and the abdomen closed without drainage. The patient made a good recovery.

Dr. Whitney's Report.—"Specimen consisted of about fourteen centimetres of the Fallopian tube, with part of the ovary attached; two centimetres of this were of normal size, then dilated suddenly into an elongated sac about three centimetres in greatest diameter, and then contracted again at about two centimetres from the fimbriated end, which was quite open. In the dilated part of the tube was a firm, dark-red mass interspersed with whitish, fibrous-looking things, and in the centre a cavity, one centimetre in diameter, lined with a smooth membrane. This mass was adherent at the part next the normal tube, and was only slightly attached elsewhere; it was directly continuous with a clot the size of the end of the thumb protruding from the rent in the tube opposite the line of attachment of

the tube and close to where it commenced to contract again at the fimbriated end. There was no blood found in this part of the tube. Microscopic examination showed the white strings to be made up of branching and club-shaped villi of the chorion. No remains of an embryo were found. Tubal pregnancy, with rupture."

CASE V. Probable tubal pregnancy; rupture, with sudden and alarming symptoms.

The patient, aged thirty-seven, gave the following history: She had one child fourteen months old. Since the birth of the child she had been regular until four months before I saw her, since which time the monthly flow had not appeared. She had a large appetite and the breasts were large and tender; she therefore supposed that she was pregnant. One month before I saw her, she was taken with sudden and severe pain in the lower abdomen, and with vomiting; while kindling the fire she fell on the floor in a faint. After this she remained in bed for a week or ten days, suffering much pain. When she got up she had a heavy and sore feeling in the lower abdomen, and there was an irregular, bloody discharge from the vagina.

The night before I saw her, she had another attack like the one just described. She again fainted, with sudden severe pain in the epigastrium; there was also vomiting and diarrhoea. Dr. F. B. Lund saw her, and considering it a case of extra-uterine hæmorrhage, sent her to the Massachusetts General Hospital, where I saw her and operated a few hours later.

On entrance the patient had a yellowish-white color; was languid and sluggish in her movements; and could not talk intelligently. She had the look of a person in a critical condition, although the pulse and temperature were about 100.

When the abdomen was opened, the pelvis was found to be filled with an hæmatocele, which had ruptured (causing the second attack of pains) and was filling the abdominal cavity with blood. About a quart and a half of blood was scooped and washed out of the pelvis and abdomen. Fresh bleeding was seen coming from the region of the right tube. Both ovaries and tubes were involved in the adhesions of the hæmatocele, and were therefore removed. The abdomen was closed without drainage. The operation was quickly finished, and the patient suffered no shock; a large amount of salt solution was given by rectum. The patient made a slow recovery, convalescence being interrupted by a pelvic abscess.

Dr. Whitney has not finished the report on the specimen.

IMPURE ICE.¹

BY F. A. DUNBAR, M.D., CAMBRIDGE, MASS.

DURING the past year my attention has been drawn to the purity, or rather impurity, of the ice supplied in this city, and I have made quite a number of analyses of ice taken from the ice-wagons while they were delivering to customers their daily supply, as well as from the ice stored in the ice-houses. I have also looked over the sources of supply of many of the companies who cut ice near by, and as the results of these examinations have been quite interesting to me, I thought the Society might be interested by a short account of the present condition of ice as supplied here for domestic use.

¹ Read before the Cambridge Society for Medical Improvement.

when the bacteria themselves may be destroyed, it is probable that their spores may be more resistant than the bacilli to cold, just as they are to heat. Cases of typhoid fever, as we all know, are most numerous in the fall; and some epidemics have already been traced to the use of water contaminated by previous cases.

It does not require a great stretch of the imagination to suppose a small pond contaminated in the late fall or early winter by the washing into it of typhoid discharges from cases occurring on its banks. If this pond should shortly after freeze over, it does not seem beyond the bounds of possibility that the ice cut from it might give rise to fresh cases. I do not know that any cases of typhoid or other diseases have been traced directly to the use of impure ice, and indeed the difficulties in the way would be so great that it may never be done; but it seems to me that until we have fewer cases of infectious diseases, for which we can ascribe no cause, the chance of some of them originating from the ice-supply should not be ignored, and if it is considered necessary for a town to have a pure water-supply, the source of its ice should no longer be left to chance.

The State Board of Health have made an investigation into the condition of the ice-supply throughout the State (an account of which may be found in the report of 1890), and have also made numerous experiments to see how far water could purify itself by freezing. These experiments resulted somewhat as follows:

Different parts of the same cake of ice may differ greatly in purity; the snow-ice is always the most impure; and of the clear ice, the more air-bubbles it contains, the more impure the ice is found to be; moreover, the bacteria are found to be far more numerous in snow-ice and around a layer of air-bubbles in clear ice. When a pond freezes over, the first inch of ice seems to be about as impure as the water; if snow falls on the ice so as to sink it, and then holes are cut so as to flood the snow, as is generally done, this upper layer is found to be as impure as the water, plus whatever impurities the snow may have derived from air. If now the ice forms rapidly underneath, so that few air-bubbles collect, it is found to be much more pure than the water from which it is formed; whatever impurities it contains are largely composed of the matter held in suspension by the water, the matter in solution being more or less completely removed. As a result of the experiments made, the Board concluded that while clear ice from polluted sources may contain so small a proportion of impurities as not to be considered injurious to health, the snow-ice—and any ice, however clear, formed by flooding—is likely to contain so large a percentage of the impurities of its source, together with some of the disease germs that may be in its source, that no ice can be recommended for domestic use that is cut from a source which would not be considered as suitable for drinking-water.

When one comes to the question of how best to prevent the use of impure ice, and what legal restrictions have been put upon its sale, it is found that scarcely anything has been done in this respect.

There is a statute, passed some years ago, to the effect that if twenty-five consumers of ice supplied by one dealer, and cut in this State, think the ice unfit for use, they may ask the State Board of Health to investigate the matter. The Board may then order a hearing, and put whatever restrictions may seem necessary on the sale of such ice. If the ice-dealer feels

aggrieved, he may take the matter into court and have it tried before a jury. Dr. Abbott, the Secretary of the State Board of Health, tells me that only one such complaint has ever been brought before the Board; and this one was brought by an ice-dealer in order to enable him to break a contract.

There is also a city ordinance on this subject, to the effect that all persons intending to sell ice for domestic use must give notice to the Inspector of Milk some time during the month of April of each year, together with information as to the source of the ice. A penalty of twenty dollars is imposed for non-compliance with this order. The inspector is then directed to make such analyses and examinations of the ice and its source as he may deem necessary, in order to determine its purity, and to give copies of such analyses to the Board of Health and the City Clerk, the latter to be kept open for public inspection. This gives no one the power to prevent the sale of ice, however impure; probably not one person out of one hundred knows that ice analyses can be seen at the City Hall; and even if it were known, not one person out of one hundred would, after looking at them, be any the wiser. As a matter of fact, no one has ever asked to see them. This is not a very good showing, either for the public interest in the matter of impure ice, or for the means at hand to prevent its sale.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Concluded from No. 10, page 244.)

CYSTICERCI IN THE SKIN OF MAN.

LEWIN's article on *cysticercus cellulose*, in Eulenberg's "Real-Encyklopädie," has remained up to the present time the most complete exposition of the subject that we have. In the *Archiv. für Dermatologie und Syphilis*, Heft 1 and 2 for 1894, he again takes up the pen on this subject. He repeats what he has previously said, that cysticerci in the skin often simulate tumors of a different nature, for example, gummata, and are not always recognized. He also asserts that few cases have been recorded where the recognition of the *cysticercus* in the skin has made the diagnosis of the parasite in other organs possible, although he has had numerous instances of this in his own practice. His cases, which are described in this article, he divides into (1) those in which the cysticerci cause little or no local disturbance; (2) those which have been taken for gummata, and treated by antisyphilitic remedies; (3) those which also caused disturbances of other tissues or organs, especially of the brain, and which have been considered of syphilitic origin also.

Lewin concludes, from his historical researches, that from the discovery of the *cysticercus* down to 1875, namely, during two centuries, it was only found eight times in the living subject. Since 1875, about 50 cases have been published, yet this number falls below its actual occurrence.

The eggs of the tapeworm inhabiting the small intestine contain the numerous embryos of the future *cysticercus*. The infection of man with these embryos may take place directly through the eggs of the tænia of his own intestine, or indirectly through the eggs of

a tapeworm belonging to another person, although the direct mode is denied by Virchow.

The comparative infrequency of the discovery of cysticerci in the skin is partially due to the slight symptoms caused, which do not lead the patients to seek medical help. Symptoms do, however, occur, but their appearance is very gradual. They may cause more or less severe rheumatic pain, sometimes even suggesting the paroxysms of gout, or numbness or neuralgic pain, stiffness of the affected part, etc.; sometimes there are also inflammatory appearances. These are indicated by pallor, or sometimes a dark brown color of the affected tissue, and capillary hæmorrhages. This inflammation may result in abscess; but whether the suppuration is caused by organisms transported by the cysticercus, or by ptomaines produced by the parasite, can only be conjectured.

With regard to diagnosis, the tumor formed by the cysticercus surrounded by its connective-tissue capsule is always more or less *movable*. The degree of this depends upon the depth of its location, and whether it is fastened by fibres from an adjacent muscle. The nodule is sometimes prominent, often not. The size is variable. On the average they are from a lentil to a hazel-nut in size. It is either round or oval in shape, the former especially in those lying in the subcutaneous tissue, the latter in those contained in the muscles. The consistency of the tumors is characteristic, being almost as hard as cartilage, and in this way it is distinguished from syphilitic gummata. Its surface is smooth. The parasite appears in man both singly and in great numbers. In most instances, there are at least several. The extirpation of the tumors is the decisive test. The bladder-like covering is seen, with a firm, whitish, round body, the size of a pin's head, in its interior, the embryo itself.

Cysticerci may be confounded with tumors of various kinds. Gummata, however, are most frequently diagnosticated, and several cases are related of tumors in syphilitic subjects, which were at first taken for gummata and afterwards proved to be cysticerci. In some cases the differential diagnosis may be extremely difficult, if not impossible. The writer believes that many of the cases of intractable gummata may have been cysticerci, and mentions the fact that Hebra describes no case of the disease in 80,000 cases of skin affections, and makes no mention of it in his work on dermatology. The hand-books on pathological anatomy also accord it scant recognition.

The recognition of the cysticercus in the skin is often of great importance in the diagnosis and treatment of diseases of the internal organs. Sometimes it occurs both in the skin and in the viscera, and its discovery in the former will often lead to its diagnosis in the latter situation. This is especially true of cysticercus of the brain, which is comparatively common, as statistics show, and which cannot be diagnosticated unless cysticerci are found externally. A number of such instances are related.

A cysticercus in the eye is naturally of equal importance in the diagnosis of visceral troubles. Von Gräfe was the first who made this diagnosis, followed later by others.

HIDROCYSTOMA.⁵

In 1884, in a paper upon malaria and sudamina, Dr. Robinson described a peculiar affection, seen especially

⁵ A. R. Robinson: Journal of Cutaneous and Genito-Urinary Diseases, August, 1893.

upon the faces of washerwomen and those who perspire freely upon the face, which was evidently related in its anatomy to the sweat-glands. The affection was described, in his manual of dermatology, under the heading "Sudamina," but has been since referred to by Jackson and others as "dysidrosis."

Robinson has found the affection of not infrequent occurrence in New York City, as he has seen not less than thirty or forty cases since 1884. All these cases, with one exception, have been in women of middle age or older, although he can give no reason for this restriction. In one case it occurred in a young man of twenty-eight, on the lower half of the right side of the nose. Most of the women had been "doing general housework," and most of them attributed it to washing; although some did very little of this work. It occurred also in cooks who did not wash, and in people who neither cooked nor washed; but in the majority of cases the subjects were middle-aged women who perspired freely and did considerable washing over tubs. The cases were all worse in summer than in winter, and in some the affection almost entirely disappeared in cold weather. The lower part of the forehead, orbital region, the nose and cheeks, are the favorite seats of the eruption. The lesions are either discrete or situated closely together, and are "tense, clear, shiny vesicles, obtuse, round or ovoid in form and varying in size from that of a pin's head to that of a pea." They are rather deeply seated and project somewhat above the level of the skin. The smaller ones look like boiled sago-grains, the larger have a dark bluish tint. There are no signs of inflammation. The subjective symptoms are slight or wanting. These vesicles contain a perfectly clear fluid, which never becomes turbid, and is of a slightly acid reaction. The lesion, if unruptured, dries up and disappears after lasting from one to several weeks.

A careful microscopical examination of a number of these lesions showed them to be due to a cystic dilatation of the sweat-duct within the corium. The epidermis was not concerned in the process. A cyst is found in the corium, whose connection with an excretory sweat-duct may be verified by the sections. As the vesicles always contain a clear acid fluid resembling sweat, and as the connection between these cysts and the sweat-duct may be traced, we have here a proof that the theory that the sweat-glands are only fat-producing and not sweat-producing glands, is not true.

Robinson is not able to explain why the lesions form, but he assumes that there must be some abnormal condition in the excretory tube, or surrounding connective-tissue, causing obstruction to the outflow of sweat.

The word sudamen has been used to describe the condition caused by retention of sweat within the corneous layer of the epidermis. This condition rarely appears on the face and is very superficial. As in sudamen the sweat is not retained within an excretory duct, and as in the disease that has been described there is a proliferation of epithelial cells so marked as to cover the whole inner lining of the cyst formed by dilatation, Robinson considers that it is entitled to a distinct name and proposes the term "hidrocystoma" as unobjectionable and fairly descriptive.

The term "dysidrosis" that has been applied to this condition is deplored, as tending to confuse it with the dysidrosis of Fox and Hutchinson, or pompholyx,

rich is an acute inflammatory affection occurring on the palms and soles.

THE TREATMENT OF CERTAIN SKIN AFFECTIONS BY THYROID FEEDING.

In the Dermatological Section of the British Medical Association held at Newcastle-on-Tyne, August 2, 1893, Dr. A. T. Davies read a paper on the above subject, which is printed in the *British Journal of Dermatology* for September, 1893.

It has been noticed that when the thyroid gland is given medicinally in myxœdema, the skin and glands regain their normal condition and there is a new growth of hair. In illustration of the influence of thyroid feeding on the skin, a case is cited that was shown at the Hunterian Society in April, 1893. The woman had, by accident, taken ten thyroids at once. The result was an acute dermatitis, with a "peculiar sticky secretion," followed by peeling of the entire hands.

The following four cases of skin disease were treated by Davies with tablets of thyroid extract :

CASE I. A blacksmith, suffering from psoriasis, which had begun three weeks previously on his left arm and had gradually affected the rest of the body. One tablet of thyroid extract a day was given, and the improvement was immediate. In eight weeks the patient was cured. He had taken, before the thyroid extract, a simple alkaline tonic for three weeks, which had had no effect upon the skin. There has been no relapse.

CASE II. A boy of sixteen, with psoriasis of three years' duration. This patient had been for some time using chrysophanic acid externally and taking arsenic internally, but in April, was put on thyroid tablets also. There was so marked an improvement after the thyroid was added, that the arsenic and chrysophanic acid were discontinued. After taking the tablets for three months he was practically cured.

CASE III. A woman of forty-three, with ichthyosis; which is congenital, and other members of her family are affected. After taking a thyroid tablet every day for a month, she was very much improved. At first the desquamation was increased, but soon began to diminish, and the skin generally to assume a more natural condition. Perspiration of face and head has also increased.

CASE IV. A woman of fifty-nine, who had had a chronic eczema for twelve years, with acute exacerbations, and who had been treated by Davies for seven years. During the last acute attack one thyroid tablet a day was given in conjunction with the other remedies, and the improvement was much faster than it had ever been before. Davies concludes that thyroid extract has a powerful effect in altering the condition of the skin, and hence of assisting the action of the remedies used.

At the same meeting Dr. Byrom Bramwell presented a paper on the "Value of Thyroid Feeding in Psoriasis and Skin Affections," illustrated by photographs of the cases. Seven cases had been treated, and there had been great improvement in all but two.

A CHAIR OF PUBLIC HEALTH AT EDINBURGH. — The University of Edinburgh has recently established a chair of public health with an endowment of five thousand pounds.

Reports of Societies.

OBSTETRICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. WASHBURN, M.D., SECRETARY.

REGULAR Meeting, Thursday, December 28, 1893, DR. EDWARD REYNOLDS in the chair.

Dr. F. W. Johnson made a report of

SIX CASES OF EXTRA-UTERINE PREGNANCY.¹

DR. W. F. WHITNEY: These cases of Dr. Johnson's are most interesting and he has kindly placed them at my disposal for microscopic examination. With one exception there was no doubt of the diagnosis. In the others there were evidences of the fœtus itself or the chorionic villi which showed them to be cases of tubal pregnancy. As regards the case of double pregnancy, there is an abstract of one in the *Gynecological Centralblatt*, in which, however, the account is not perfectly clear that it is of pregnancy occurring in both tubes. So that as far as the literature goes, throwing out this possible double case, Dr. Johnson's statement that his is unique, is correct.

DR. E. W. CUSHING: I think we have to thank the reader of this paper for the very lucid exposition of the subject. It is a pleasure to listen to it as a paper apart from the facts, and the facts are of such great importance that I sincerely hope they will receive the attention from the profession in general which they deserve. It has often been said to me by my friends in Philadelphia, "What are the men of Boston doing that they do not have more extra-uterine pregnancies reported?" There is hardly a meeting of the Philadelphia Obstetrical Society but one or two are reported. There is no great reason to suppose that more cases occur in Philadelphia in proportion to the population than occur in a city like Boston. The inference is that there are many in this part of the country which are not diagnosed and not operated upon, and which die unrelieved. Dr. Johnson evidently is doing his share; and if all the practitioners in all parts of the State, or in this part of the State, would find them as readily, and report them, and get them operated on, I think we should see a good many more.

My own experience is comparatively limited. I have had in years gone by several cases of what we then called hæmatocele, which I have no doubt now were really extra-uterine pregnancies. In 1887 I had and reported a case which was not operated on, but got well without operation. It came very near my household, and attracted my attention very much to this subject. The lady was taken in the theatre suddenly with pain and collapse; got home with difficulty; went from one collapse into another; and nearly died after various attacks of severe pain in the side. Nevertheless convalescence occurred, with slight elevation of temperature, and formation of a collection of fluid in the left iliac region. Dr. Fitz thought that the mass which formed at that time was a serous cyst. On the strength of that case I went into the Museum at Harvard, and picked out every specimen there. These I photographed, with Dr. M. B. Parker, and published in the *Annals of Gynecology*, February, 1888. Since then I have been in the way of seeing and publishing a good many cases; and, as far as I

¹ See page 256 of the Journal.

have been able, I have continually turned attention to this question.

In regard to the escape at the end of the tube, I remember distinctly at least two of Price's cases where the blood was escaping from the end of the tube in large amount.

My own operated cases number three. One, which I have published² was at nine months. I will not devote attention to it here except to say that the placenta there lay in the end of the tube, implying that the tube must have been open at the end and the placenta lay in the middle of it. That was done in Peabody two years ago, and the woman made an excellent recovery. I have had two other cases. One was brought to me by Dr. Galvin, where the principal symptoms were supposed to be probably caused by a pus-tube, namely, pain and high temperature; there was a skipping of the menstruation, irregular hæmorrhages; and it is not always easy to make a diagnosis in such cases. On opening the abdomen blood was not free, but was encapsulated on the side. Separating the intestines, I got into a mass of blood, and removed a tube, which I have here, and which I presume is an extra-uterine pregnancy, I also removed a number of old clots of blood. The other case was brought to me by Dr. Garceau, Jr., and had been seen by Dr. Chadwick and Dr. Homans. Dr. Homans was to operate on it, but had to go to Chicago; and so the case came to me. It proved to be an extra-uterine pregnancy, and the sac unruptured; but it shows that the contention that H. A. Kelly made before the British Medical Association, namely, that a case could be diagnosed before rupture, at least with great probability, is well founded. I believe Drs. Chadwick and Homans agreed with Dr. Garceau that it was in all probability extra-uterine pregnancy. Of course, if the tube is not ruptured, it is the easiest thing in the world to remove.

The only thing of interest which I should wish to bring up for debate is the question as to the location of this blood. Dr. Johnson reports in one case that it was between the layers of the broad ligament. Dr. Whitney also refers to the same, and I know it is Tait's theory that in the cases which do not die the rupture occurs between the layers of the broad ligament, and that the blood is coagulated there. The pregnancy may go on further; or if the fœtus lives, the broad ligament forms a nest for it, in which it can grow, the layers of the broad ligament being separated. The question is, whether that is so in anything except a very rare number of cases. It is, of course, a very beautiful and ingenious theory; but those who have done a great many of these operations have not found that that condition existed. Price reports that he has never found it so, and at last accounts he had had ninety cases. He says that in all cases, whether the fœtus was big or little, the broad ligament was not separated, but the blood was behind the broad ligament, roofed off by adhesions to the bowels, and was free, or in fact a hæmatocele; that the old division of hæmatocele into that which is in the cavum peritoneale and cavum subperitoneale does not exist in his experience as seen at the operating-table in a large number of cases. Others have told me the same thing. In my own case, where it had gone on to nine months, it was not in the broad ligament; it was free in the abdomen, and the end of the tube was a cup. In those

cases where the symptoms were not those of acute rupture, but those of high fever from the beginning of the deposition of this clot, the blood being firmly coagulated, it was in the same place that you get a collection of pus such as was formerly supposed to be in the folds of the broad ligament; it is now agreed that it is in the tube or leading from the tube. I throw out the question for discussion, whether we are passing through the same change of theory in regard to the location of this mass of blood, and instead of believing that it is between the folds of the broad ligament that we shall recognize the fact that the blood has escaped from the tube, that not all cases bleed to death, that in the cases we used to call hæmatocele the hæmorrhage was a small one. Tait states that if it is between the folds of the broad ligament they may not bleed to death. He implies that if it is free in the cavity, they are sure to bleed to death; but, in point of fact, there may be a little opening, leaking enough to start up a little inflammation; it may roof itself off; and the very tubes in which this occurs are apt to be tubes in which there is adhesion about it. So that you get your collection of blood behind the broad ligament; at any rate, that is where I have found it; and other men have found it there without exception. I would like to ask Dr. Johnson if he feels very sure in regard to the point as to where the blood was located in that case, because it is a matter of urgent debate at present.

DR. JOHNSON: In both those cases where there was what I called hæmatoma in the broad ligament, there was no question about it at all. Seven or eight saw it. There was no blood in Douglas's pouch at all. It was bulging out on both sides of the broad ligament. When I bored through, I bored through cellular tissue. It was in the broad ligament in both cases, and those present agreed with me.

DR. INGRAHAM: I desire to say a few words as to the early symptoms which were observed in my case operated on by Dr. Elliot. A woman, thirty-two, single, came to my office one evening about nine o'clock, and said she was suffering very severe pain in the lower part of the abdomen, and had been flowing profusely for one week. She had been regular in her menstruation up to six weeks before her visit. At this time, six weeks before, the menstrual period was delayed one week; then she began to flow every day about an hour. This, I think, continued about three weeks; then she stopped flowing, and did not flow again until a week before she came to the office. The flow at this time was very profuse, and she was so weak that she could not do her work. On examination, I found a good-sized mass on the left, with the uterus quite a little enlarged and the cervix pushed down. The abdomen was so tender that I could make very slight counter-pressure. I told her to go home and report at once if she had pain or felt faint. I suspected it might be an extra-uterine pregnancy. At seven o'clock the next morning she sent for me. I found she fainted at midnight, when she got up to go to the water-closet, and when she recovered she did not know how long she had been on the floor. She was chilly when she got up, and crept into bed. When I saw her, her pulse was 150, temperature 97°, and she had all the symptoms of collapse. That was Sunday morning. We had no bed vacant in the Vincent Hospital, and I telephoned to Dr. Pratt of the Massachusetts General Hospital. He sent an ambulance, and we moved the woman there. Dr. Elliot

² *Annals of Gynecology and Pædiatry*, January, 1891.

operated the next morning. The abdomen was full of blood. The case was one of extra-uterine pregnancy. I think that such cases should be reported, to impress upon the minds of physicians that the symptoms of collapse from any intra-abdominal hæmorrhage are just the same in the case of hæmorrhage in tubal pregnancy. It is difficult, I think, to make a diagnosis of tubal pregnancy unless one takes into consideration all the circumstances. This young woman was single, and stoutly denied any cause. She had been ill so long, that is, she meant she had suffered severe pain every time she was unwell, she thought she had some tumor, and tried to impress me with this idea. The mass was very soft and doughy. When I examined her the next morning at seven o'clock, I found that the abdomen was dull on percussion in the lower part; there was distinct bagging of the walls of the vagina; and the change from the night before in the relation of parts in the vault of the vagina convinced me there was no question whatever of the trouble.

DR. EDWARD REYNOLDS: The Chair thinks Dr. Ingraham's remarks raise an important point. We hear frequently accurate rules for the diagnosis of extra-uterine pregnancy. The specialist and operator knows there are a very large number of cases in which the diagnosis is determined principally by the operation. I think a great many cases are lost because the general practitioner feels that before turning them in for operation he ought to make a more accurate diagnosis than is in reality possible; and I hope we shall hear something on that point.

DR. J. W. ELLIOT: The case Dr. Ingraham mentions was certainly a very good case and a very good diagnosis. She came to the hospital in the condition Dr. Ingraham describes. The next morning she reacted somewhat. I opened the abdomen in the Trendelenberg position, and found a large amount of blood and a ruptured tube which had ceased bleeding. After washing out the abdomen and taking out all the clots, I put in a drainage-tube, and she made a slow but perfect recovery.

Dr. Johnson's paper interested me very much in various ways. One was that he seemed to have made the diagnosis in four out of six cases; which I think is very encouraging, because when the subject came up a few years ago our ideas were so vague that very few diagnoses were made. As time goes on the diagnosis seems to be easier; in fact, I begin to feel now that it is moderately easy to make in most cases. I do not mean to say there are not extremely difficult cases for diagnosis. In the last year I have operated on three cases and the diagnosis was made in two out of the three. One other case was diagnosed as hæmorrhage from the tube with probable extra-uterine pregnancy, which it was. Another case was of long-standing, and the diagnosis was not made and probably could not be made. The prognosis, also, is much more favorable than we used to think. All of Dr. Johnson's cases got well. The four I mentioned got well. They all should get well, of course, for hæmorrhage is not a disease but an accident, and should get well if the antiseptic precautions are observed. Cases like the one described by Dr. Ingraham, where the hæmorrhage is severe and stops of itself, are wonderfully tolerant of the hæmorrhage as well as of the operation.

The diagnostic point that impresses itself on me most of all, is the pain they have. All the cases that

I have seen have had pain. Pain with collapse and tenderness, even if one cannot feel anything in the vagina, would be sufficient reason for opening the abdomen if there had been the slightest irregularity of menstruation. In the cases where the rupture has taken place, one cannot feel anything by vagina, for there is simply extravasation of blood in every direction. As to the question of whether rupture takes place into the broad ligament or not, I have never had a case where it did; but I have supposed it did, because I have read so many cases described by good observers. I do not see why it should not escape into the broad ligament.

This subject is a very important one and I think every one ought to report the cases they see, so that the community may become familiar with the subject, because it is a kind of malady where lives can be saved by good knowledge and prompt action.

DR. W. L. BURRAGE: I have operated on five cases, all of them since October of last year. My first case was a neglected one, and the blood had gone on to suppuration and septic infection. The case was septic, and the specimens were so disorganized that they were in no condition for pathological examination. The specimens of the other cases are in Dr. Whitney's hands; and he has said with reference to them that in two he has completed the examination, and there is no doubt as to the diagnosis. Of the other two, from the preliminary examination and the gross appearances, he thinks there is little doubt. The cases all got well. The first case I reported before the Alumni Association of the Woman's Hospital in New York last January, and published in the *New York Journal of Gynecology* for May. The second case I saw with Dr. C. W. Townsend, and operated for him afterwards. That case he reported before the Obstetrical Society of Boston; and it was reported in full in the *Medical and Surgical Journal*, November 2d, last. The other cases have not been worked over enough yet for report. In three of the cases I made the diagnosis. In the fourth, extra-uterine pregnancy was thought of, but nothing at all sure; and in the fifth it was quite unexpected.

As regards the situation of the hæmorrhage in my cases, I do not think it was in the broad ligament in any of them. It seemed to me to be behind and encapsulated in some, and in others, free; but, as Dr. Elliot says, I can see no reason why it should not be in the broad ligament.

I quite agree with the other speakers in the importance and gravity of the condition, and that the cases should be operated on as soon as the diagnosis is made. Of course, it is very difficult to make a diagnosis in this affection. Pus-tubes are the principal condition with which it is likely to be confounded, but the operation is generally indicated in either event; and, of course, in the case of acute abdominal emergency, operation is the only thing.

The case in which the diagnosis was not made was a hospital case. The patient was thirty years old, married one year for the second time, mother of four children; catamenia always regular, lasting three days, using four or five napkins; backache constantly, worse at catamenia. Entered the hospital August 15th. In July flowed three weeks, passing a great many clots, and had sharp pains in the left lower abdomen that lasted one-half to one hour at a time. Ever since that time she had had, once or twice every week, rather

bad pains; but in her estimation the pain was secondary in importance to a feeling of prolapse at the vulva. There was a mass in the pelvis on the left side, the size of a closed fist; and I thought more than likely it was a pus-tube. The abdomen was very sore. She complained of bearing-down feelings. She had a bad tear in the cervix and another in the perineum. I found this mass in the pelvis, and advised operation. She consented, and we found extra-uterine foetation of about six weeks. When she went home, I believe she complained bitterly because she still had the feelings of prolapse for which she came in, and thought the right thing had not been done.

DR. W. M. CONANT: Since November, 1893, I have seen seven cases of what I thought were extra-uterine pregnancy. Six of them have been pronounced extra-uterine by the pathologist's report; the other one, which was a fatal case, I supposed without question was extra-uterine. It proved to be a hæmorrhagic condition in the tube with pus. That case at the end of a week developed septic peritonitis, and died. The other six lived, and got well. In four the diagnosis was made before operating. The first case which I saw was sent to me as a simple cyst of the ovary, and I so diagnosed, and operated and found a simple cyst. On the other side, I found something which looked like an extra-uterine pregnancy as large as the thumb. So it proved. The other case, perhaps, ought to have been diagnosed, but was not; it was an unruptured tube, and I have been in the habit, from my own experience and the cases I have been able to collect, of dividing the subject into two heads: those that are acute, (and I agree with Dr. Elliot that in the majority of these acute cases you can readily make the diagnosis); and those in which the tube is not ruptured, and are not acute. The diagnosis oftentimes is not accurately made until it is in the hands of the pathologist. The case I lost presented the symptoms which Dr. Elliot spoke of as being the cases he would operate on without question,—there was irregularity of flow, tenderness and a mass in the pelvis. The last case I had was one in which I very nearly made a mistake. The woman presented all the symptoms of acute rupture. I saw her in consultation about ten days before I operated. She had had two or three previous attacks of sharp pain, relieved by rest in bed and opium. I made an examination, and found a mass which felt much like a pelvic abscess. I think this is the only case in which I have been at all tempted to aspirate in the last three years. She was not in a position to have proper care at home, and I advised immediate removal to the hospital. She waited about ten days, and then entered the hospital. I got a history of more or less continuous flow since my last visit.

I found the mass much enlarged, and at once changed my diagnosis from pus-tube to extra-uterine pregnancy, and advised immediate operation. She had that night another attack of sharp pain, with fresh exudation; and the next morning when we opened the abdomen, the blood was fresh. I can verify the statement Dr. Elliot made, that the blood comes out in spurts, because I felt as if I had torn away a part of the iliac vein. It was not until I got hold of both tubes and applied a clamp, that I could get a look. In this case there was a very speedy recovery, in spite of the fact that at the operation the pulse was at 160. She rallied immediately, and now, two weeks afterwards, she is sitting up. We must remember the possibility of so

profuse hæmorrhage that death may follow from exhaustion.

DR. W. F. WHITNEY: In regard to the bleeding from the end of the tube, I do not wish to lay that down as an absolute fact, that it does not occur. But I have found in some cases, where the ovum is situated at a distance from the fimbriated end, there has been a space perfectly free from blood. In the case Dr. Elliot referred to, I also think there is the possibility of mistaking blood which has gone into the fimbriated end from that which has come out. As to the occurrence of blood or pus in the layers of the broad ligament, I do not see any anatomical reason why it may not occur. Of course, as Dr. Cushing rightly states, a great many of the old hæmatoceles are so walled off by thick layers of fibrin and partly organized tissue that it is difficult always to recognize the difference between that and the true connective-tissue of the broad ligament. I have had one case where, I am positive, the pus entirely surrounded the tube and was entirely beneath the peritoneum.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

REGULAR Meeting, Wednesday, January 17, 1894,
DR. F. C. SHATTUCK in the chair.

DR. G. G. SEARS read a paper on

PREGNANCY AND HEART DISEASE.¹

DR. GEORGE HAVEN: I had the pleasure of seeing this case with Dr. Sears, and the fact that after a month of care and rest this woman had grown worse instead of better, and that her condition seemed to be a very critical one, led me to think the safest thing was to empty the uterus. It has always seemed to me that where the life of the mother was in imminent danger, the life of the child should be sacrificed. It is, I think, a mistaken idea of humanity to wait until the mother is in the last stages of disease before the operation is undertaken in cases where pregnancy is a serious complication of her trouble. This, I think, is true, not only in cases where the heart may cause the trouble, but also where the trouble is due to kidney disease, or the complication is such as eclampsia occurring in pregnancy, so that I have always considered the better thing to do, where the opinion is very distinct that the life of the mother can be saved by sacrificing the life of the child, to sacrifice the life of the child. I think in this case the after-result proved the wisdom of her delivery.

It seemed to me that, in this case, it was unwise to give ether, and Dr. Sears thought so also. The cervix was rather soft and patulous, and was dilated sufficiently to put in a certain amount of iodoform gauze. The vagina was washed with soap and corrosive beforehand, and gauze introduced into the body of the uterus and the vagina packed with iodoform gauze. This was left in the vagina two days, when, upon removing it, the fœtus and the placenta were found in the vagina. I should prefer this to the introduction of a catheter or any foreign substance of that kind, believing, as I do, it is a much cleaner method and a much

¹ See page 233 of the Journal.

surer method. I have seen cases where catheters have been put in, and left in position forty-eight hours, without any result whatever. I have seen cases where the result was disastrous. They are tied outside, and may lead to septic condition of the uterus which may prove fatal to the mother.

Very little mention is made in any text-book on obstetrics or gynecology which I have seen, about the complication of pregnancy and heart disease; and for that reason Dr. Sears's paper is of peculiar value.

DR. EDWARD REYNOLDS: I wish to speak particularly of the question of interrupting pregnancy or of allowing it to go on, not of the conservative treatment of the heart lesion. I would divide the question, for convenience of discussion, into the three periods of pregnancy; when serious symptoms appear in the first three months, there will always be a strong probability of an ultimate necessity for a resort to interference; but in that period due care must be taken to eliminate the depressing effects of the nausea, salivation and other troubles of early pregnancy; to estimate properly the fact that the first three months of pregnancy is a period of depression of the general health in the majority of cases of normal pregnancy, and that after the woman has passed three or three-and-a-half months her condition normally becomes better, so that if the woman with heart disease can be carried successfully past that period, there is then some prospect of an improvement in her general condition, and from that of better toleration of the heart lesion; remembering what I believe to be the fact, that the question is how full compensation takes place.

In view of the effect of pregnancy upon the normal heart, in which the increase of compensation is necessary to overcome the normal added load, if the serious symptoms first appear in the second three months, I think the prognosis will always be tolerably grave. That is the period of well-being in normal pregnancy. If the heart gives out then, it gives out under a load which must be expected to increase constantly towards the end of pregnancy.

In the third three months I should feel inclined to give the benefit of doubt towards letting the pregnancy go on undisturbed. If the woman has come up to the full six calendar months in tolerably good condition, there must certainly be a good prospect of carrying her to the viability of the child at seven months. After she has reached seven months in anything like good condition she does better, as far as my experience goes, than one would expect. I should be inclined toward conservatism during the last three months.

If it is necessary to interfere with pregnancy in heart disease, a word must be said as to the method. I do not think that it would be wise in cases of heart lesion sufficiently serious to require operation to adopt the method which I should prefer for most other conditions — etherizing and finishing the operation, to the removal of the last atom of the ovum, at a single sitting. I think the method by introduction of a foreign body, and preferably of a strip of iodoform gauze, into the uterus, followed by a tamponade of the vagina, almost invariably works well. A tamponade of the vagina is not sufficient by itself, but with the introduction of a foreign body into the uterus, tamponade of the vagina, in my experience, has always resulted in the favorable and tolerably rapid progress of labor. I remember especially a case I saw a year or more ago with Dr. Folsom, where a woman with a serious heart

difficulty, which rendered etherization distinctly inexpedient, started to miscarry spontaneously at about the sixth month. I inserted a little iodoform gauze, and packed the vagina, and at the end of about twelve hours, there being some labor pains present, and the woman becoming greatly distressed, I removed the packing, and found that the os had dilated so far that it was easy to remove the ovum with the curette without pain to the patient and without ether. Even if labor under such circumstances should become distressing, the fact that there has been a preliminary attempt at the induction of labor would probably render it possible to clean out the uterus with the curette, with a moderate amount of pain, without ether, and much more easily than if there had been no preliminary tamponade.

As to the general principle of the treatment of pregnancy complicated by disease of serious import to the mother, I think that the profession in the past, one and all, its most prominent as well as its less prominent members, have been misled by an undue concern for the prospects of immature foetuses. The history of the profession teems with examples in which, when the question of abortion came up, conservatism has been persisted in until still more threatening symptoms supervened; then the abortion has been undertaken, and both mother and foetus have been lost. I think that when this question comes up, that it is usually not, Shall abortion be done now or at some future time? it is almost always, Shall abortion be done now, or shall pregnancy go on to term? Taking the condition I refer to, cases in which the question is properly before us, in which the symptoms are sufficiently grave to bring up the question whether abortion shall be done, it must be decided whether abortion shall be done early. Abortion done for any serious complication of pregnancy is a very simple and safe matter if it is done early; it is followed by the promptest relief to the condition, so far as that is dependent on pregnancy. Abortion done after the woman is anything that approaches moribund is almost hopeless; and the physician should never shirk the responsibility of doing the operation while the mother is in good condition. I think that when we consider the difference between the value of the life of a woman, mature, occupying a place in society, the mother of children, the wife of a man dependent on her for the comforts of his home; when we compare the value of her life with that of a foetus at three months, which is exposed to especially great danger from the condition of the mother, which, even though it be born, runs a strong risk of never attaining maturity, and in heart disease a risk which is again already compromised by the condition of the mother, — I think, under those circumstances, a serious risk to the life of the mother is of far more importance than the termination of the life of the child.

DR. A. L. MASON: The case of Dr. Sears is very interesting, and I have no doubt his course was wise. It must be easy in such cases to wait too long, as it is in the dangerous vomiting of pregnancy, until the operation is too late. When the question arises whether a woman with heart disease should marry, it sometimes is very difficult to decide that in the negative. The cases Dr. Sears has referred to were probably of a very severe description, because the milder cases of cardiac lesion, in which pregnancy occurs and labor goes off without accident, are not reported, and

there must be very many such. The existence of a murmur, provided that there is a good compensation, and has been for a long time, I should think might frequently be no bar to matrimony. Advice is not always asked in such cases; sometimes it is, and it may be hard to decide. The murmurs, which, perhaps, are congenital, or those with perfectly good compensation of many years' standing, where patients are able to take the usual amount of exercise, and can walk up hill without dyspnoea, must be present in many women who can marry with comparative safety. It seems to me Dr. Sears's statement was a little sweeping. I think he said that women with heart disease should not be allowed to marry; if they married they should not become pregnant, and they should not nurse their children. The question is, what degree of heart disease or what conditions of the heart would be sufficiently grave to oblige us to advise that women should not marry.

DR. REYNOLDS: Although I did not have the pleasure of seeing this case of Dr. Sears, I was consulted about it by Dr. Sears and Dr. Haven shortly before the operation was done; and then, as now, I said that while it is always difficult to judge of a case without seeing it, yet, from the symptoms detailed, I should support abortion in that case.

DR. F. C. SHATTUCK: The paper reminds me strongly of a bit of my own experience. Five years ago I was asked to go out of town to see the wife of a gentleman, the subject of mitral disease. She had one child a few years old, and had had a very alarming time at its birth. She seemed to be so well — I think it was in November or December I saw her — that in the previous spring she had been authorized by her family physician to become pregnant. The murmur was reported as slight, the cardiac condition as comparatively unimportant at that time. When I saw her I think she was four months' pregnant. She had then serious cardiac symptoms. Her husband said they had been distinctly advancing — shortness of breath, inability to walk, etc. The murmurs and the evidences of insufficient compensation were distinct; and it was my opinion, which I expressed, that it was best to terminate the pregnancy. That opinion was based upon the belief that we had to do with an advancing cardiac lesion as far as could be told from the symptoms. This woman was so well the previous spring that her heart lesion was considered trifling. It was not trifling when I saw her. They were extremely anxious to have children, and in this matter other counsels prevailed. Soon after she had an attack of influenza with pneumonia, and miscarried without difficulty. Then she went along pretty well; and a year or two later she became pregnant, went to term, was delivered without very serious trouble, but died within two weeks after the labor from cardiac failure.

To-day I saw a lady with a very bad heart who is said to have had valvular disease all her life, as long as anybody knew anything about it. She is about forty years of age. She has had two children, the youngest twelve, both children born without any great difficulty. The doctor was very much alarmed about her first confinement, but she went through it perfectly well. At her second confinement she had one pain, and that lasted three-quarters of an hour without interruption; otherwise the confinement was uneventful, and the symptoms of failing compensation she now presents are of comparatively recent origin.

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ECTOPIC GESTATION.

THE report of a large number of cases of tubal pregnancy occurring in this vicinity¹ brings up the pertinent question whether this peculiar condition is really more frequent now than in years past.

This can be surely answered in the negative, as it is not only from here but from all over the world that a great increase in the number of cases has been recorded. During the past fifteen years, seven hundred and eighty cases have been reported, of which about five hundred occurred within the last four years. This great apparent increase is due simply to the attention which has been directed to the subject (just as in the case of appendicitis) and to aseptic surgery, which has rendered successful abdominal operations possible.

The study of the cases from the clinical and anatomical sides has added much to the certainties of diagnosis, the best line of treatment and points of theoretical interest in the way the ovum acts on the surrounding parts.

The diagnosis is often very difficult, especially in the early stages, when it is all important. But the cardinal points of irregularity of menstruation, in a person previously regular, often with a slight persistent flow from the uterus, one or more attacks of sharp pain and syncope, and a tender swelling on one side of the uterus, are now beginning to be so well understood that fewer cases will be overlooked in the future.

There are but two lines of treatment, either the expectant or operative. The real mortality under the former cannot be surely determined. In a series of two hundred and sixty it was found to be sixty-three per cent.; but from the difficulty of diagnosis we are inclined to think a disproportionate number of fatal cases is always recorded. But even placing it as low as fifty per cent., the patient has then but an equal chance. The statistics from the operated cases are more reliable, as the diagnosis always can be verified.

¹ See pages 286, 290 of the Journal.

In a series of five hundred and fifteen cases there was a mortality of twenty-three per cent., thus showing twice as many recoveries as under the expectant treatment; and, moreover, the period of convalescence is greatly shortened. If the zeal of the operator can be restrained from removing everything in the pelvis when he has it once open under his hand, the chances of future sterility are no worse in one case than the other.

The anatomical study has brought out many interesting facts. The most important to the patient is that the first hæmorrhage is rarely fatal, and if the warning thus given is early heeded, the life can be saved. The bleeding occurs in two ways, either from one of the thin-walled sinuses in the wall of the tube directly into the abdominal cavity, or indirectly, first into the foetal membranes and then through the open fimbriated end of the tube or a hole in its thinned wall into the abdominal cavity. But in none of the cases which we have had an opportunity to examine, now over fifty in number, has the hæmorrhage been from elsewhere than the placental site, about which there was formed no protective thickening of the wall. The rupture directly into the abdominal cavity is naturally the more serious for the patient. When it occurs into the membranes, the death of the foetus results, but this does not prevent a repetition of the hæmorrhage. This is proved from the examination of specimens showing that the period of development of the embryo corresponds to a much earlier date than would be the case if it had lived during the entire time the clinical symptoms had indicated. This shows how irrational any treatment is, which is directed alone to killing the foetus (morphine, electricity); for, granted the death is brought about, there is no proof that the tendency to subsequent hæmorrhage will be stopped.

As yet no satisfactory cause has been found that covers all cases; various theories have been advanced to be abandoned. The first thing that bars the way is our ignorance of the place where the ovum is fecundated in the human species. If, as is generally assumed, this is in the uterus, then the accidental meeting of the vitalizing elements at a point elsewhere is a sufficient explanation. If, on the other hand, this should be shown to occur normally before the uterus is reached, as is the case in some of the lower animals, then a hindrance to the onward passage of the egg will be the best explanation. Under any circumstances a normal mucous membrane will be more favorable for the future development than a diseased one. And the facts bear out this assumption.

The possibility of the migration of the ovum from the ovary of one side into the tube of the other side, has been proved by the cases of tubal pregnancy. The best explanation is that by Hasse, who finds that the ends of the tubes are closely approximated behind the uterus during life in many cases, and not widely separated as they are usually described and figured by the anatomists.

The majority of observers agree that when preg-

nancy occurs in the tube there is very little, if any, decidua formed, and but a minimum hypertrophy of the wall, and in most cases a decided atrophy. The examination of our specimens makes us coincide with this view. At the same time the decidua is formed in the uterus, and it hypertrophies as if the ovum was present there. This has suggested to us that the fecundated ovum exerts a double action on the organism, which may be designated as sympathetic and local. From the former would come the uterine decidua and hypertrophy, the true corpus luteum, and changes in the mammary glands. It acts, no matter where in the body the ovum is vitalized, but by what subtle influence is unknown. Naturally a reflex action of the nervous system would be the first to suggest itself. The second action, which may be regarded as the local one, is shown by the rapid development of vessels at the point where the ovum locates. In the uterus this action has been lost sight of from its association with the other changes due to the sympathetic action. But it comes clearly into the foreground when we study the condition in the tube, for here an atrophy of the wall and adjacent mucous membrane are the associated phenomena, due to the mechanical pressure of the growing ovum, while it is in the blood-vessels alone that there is any indication of a marked increased activity in growth, which may be best classed as a process due to an irritation.

THE BACTERIA OF PERITONITIS.

THE interesting subject of the bacteria associated with peritonitis has received a new and important contribution in a monograph by Drs. Tavel and Lanz, in a recent issue of the *Mitteilungen aus Kliniken und Medicinischen Instituten der Schweiz*.

The authors have given in this report the results of their study of seventy odd cases of inflammation within and about the peritoneum or neighboring organs. But only a part of this number fall within the usual acceptation of the term peritonitis. The material for this study, with the exception of a very few cases, has been obtained at operations in the clinic of Professor Kocher, and has, therefore, the great merit of having been secured intra-vitam, thus excluding the possibility of a post-mortem migration of intestinal bacteria into the peritoneum, a possibility which has been brought forward as an objection to the results of E. Fränkel and Prädöhl in their work on peritonitis.

The cases have been of the most varied character and diverse etiology; but if considered analytically they may be fairly well divided into several groups. In considering the bacteria met with in their examinations we shall only mention those which are recognized as having pathogenic significance, and shall neglect the less important forms of which as many as a half-dozen or more species have been observed occurring together in some cases.

Perhaps the most important class of cases are those in which there is inflammation in or about the vermiform appendix. Of these, nineteen cases were studied,

The results may be given as follows: of seven cases of purulent formation within the appendix, the bacillus coli communis was found in six, the streptococcus in two, and the pneumococcus in one case. None of the cases were sterile. In fifteen cases of peri-appendicitis, the examination of the exudate or abscess showed the presence of the bacillus coli communis in eight; the streptococcus in five; the staphylococcus citreus in one; the pneumococcus in one, and actinomyces in three cases. Two cases were sterile. The number of species found varied in the different cases from one to nine in number. It is interesting to note that the examination in seven cases of the interior of the appendix, where the contents were to be considered as normal or not affected with the inflammatory process in the neighborhood, showed no bacteria in two cases. This result is surprising in view of the enormous number of bacteria always present in the large intestine. Of three cases of peritonitis diffusa, secondary to appendicitis or peri-appendicitis, the bacillus coli communis was found in two, the bacillus pyocyaneus in one, and one case was sterile. In this group of peritonitis diffusa are also three cases which had their origin in the gall-bladder, one being secondary to a choledochotomy. In two of the cases the bacillus coli communis was found, and in the third the staphylococcus albus.

In this connection it may be mentioned, that of three cases of gall-stones, the bile contained staphylococcus albus in one case, bacillus coli communis in one case, and the remaining case was sterile.

Of six cases of peritonitis from various causes, in two bacillus coli communis, in two streptococcus, in one bacillus pyocyaneus were observed. In a single case no bacteria were present. Four cases of intestinal obstruction formed another group of cases, in three of which there was a fibrinous exudation in the peritoneum. Of the four cases but one yielded an organism of any significance, namely, the staphylococcus albus. Two were apparently sterile.

The last group of cases are those in which the fluid of hernial sacs was examined for bacteria. Of seventeen cases all were sterile except two, and these positive cases were from four of beginning or advanced gangrenes of the gut. The absence of bacteria in the other two cases of gangrene, where the conditions for their migration through the wall of the gut were apparently favorable, is surprising. On the other hand, in the sac fluid of two out of three epiploic hernias, where bacteria from the intestine were scarcely to be expected, bacteria could be demonstrated. In two hernial hydroceles the fluid was sterile. These results are of interest as showing that we are as yet ignorant of all the causes which determine the migration of bacteria through the intestinal wall. It is also interesting to note that the examination of the contents of a hernial loop of the small intestine accidentally opened at operation showed few bacteria. This is another proof of the relatively small number of organisms in the small intestine as compared with those in the larger gut.

In addition to the foregoing cases, the authors have included in their list of examinations a number of other cases more or less germane to the subject of peritonitis, but which have no special interest. Among these, however, should be mentioned a case of sub-peritoneal abscess, and a case designated as empyema of a hernial sac, in both of which tuberculosis originating in the vertebræ has not been sufficiently excluded. The latter case especially serves to emphasize how desirable it is for the bacteriologist who works with pathological processes to have some knowledge of pathology.

The technique employed in the work is, on the whole, satisfactory. The study of the biology of the different bacteria is perhaps, in general, as thorough as is necessary. A feature of their investigation, which is of especial interest from a bacteriological point of view, is the study of thirty representatives of the bacillus coli communis with reference to their various cultural peculiarities, number of locomotor organs and other characteristics.

The results would seem to show that scarcely any two of them are exactly alike. The differences, however, in many cases, are only such as one would encounter in studying parallel cultures of almost any organism, and we do not think that the writers are justified in considering many of such differences as constant. It is well known that different varieties of the bacterium coli exist, but the division of these thirty representatives of that group into as many as twenty varieties does not seem warranted from the observations. Of the thirty, two at least are clearly not to be classed within this group of the bacterium coli, as would appear from a consideration of their cultural peculiarities as given by the writers. In several cases bacilli somewhat resembling the Klebs-Löffler organism have been observed. To these, however, no pathogenic significance is ascribed. We cannot agree with the writers that this is probably the pseudo-diphtheria bacillus of Löffler. The cultural peculiarities of that organism are too little known for it to be identified, and our own experience has seemed to show that there may be nearly as many pseudo-diphtheria bacilli as there are observers.

In addition to the results of their own experimental work, the speculative and historical aspects of various questions connected with the subject of peritonitis have been well considered by these investigators. As to prognosis, they state that no conclusion can be drawn from the species of bacteria present. In those cases, however, where no bacteria are to be demonstrated, it would seem that the result is, in general, more favorable than in those where bacterial forms are present.

Therapy also receives due attention. Especially valuable and noteworthy features of this contribution are thirty-two excellent reproductions of microphotographs of some of the bacteria observed.

"Man is a part of collective nature; his development proceeds not by leaps and bounds, but slowly out of past and present." — *Billroth's Autobiography*.

MEDICAL NOTES.

CHICAGO SMALL-POX STATISTICS. — During the month of January there was 128 cases of small-pox in Chicago, 29 of which were fatal, some before they could be removed to the hospital. There was seven cases of hemorrhagic variola, none of the patients having ever been vaccinated. There were many confluent cases, all in unvaccinated persons. A few of the fatal cases had been vaccinated in infancy, but never re-vaccinated.

A HOSPITAL FOR TUBERCULOSIS IN VIENNA. — The Emperor of Austria has made the anniversary of the death of the late Crown Prince Rudolph the occasion of giving a sum of 10,000 gulden towards the establishment of a home for tuberculous patients in Vienna.

THE ROYAL COMMISSION ON VACCINATION. — In an editorial upon the first volume of the long-expected report of the Royal Vaccination Commission, the *Lancet* says: "The evidence published in the volume shows that the difficulty that really has to be met is the readiness with which well-intentioned people can be misled. Perhaps one thought impresses the reader more than any other in studying the volume which has been issued. If one tithe of the pains had been taken to make known the risks of small-pox and the value of vaccination that have been expended on endeavors to prejudice the public against vaccination, it is not probable that the appointment of a commission of inquiry would ever have been deemed necessary."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, March 14, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 30, scarlet fever 36, measles 12, typhoid fever 5, small-pox 7 (no deaths). Two cases of small-pox have been reported to the State Board of Health from places outside of Boston; one from Waltham and one from Lynn (which is the first case in that city since 1873).

A WARNING TO BOSTON PHYSICIANS. — During the past week a sneak-thief has been plying his trade among physicians' houses, if given an opportunity to be left alone in the reception-room. He is a man about forty-five years old.

NOTIFICATION OF CHICKEN-POX IN BOSTON. — The Board of Health of Boston has given notice that in addition to Asiatic cholera, small-pox, scarlet fever, typhus fever, diphtheria, measles, typhoid fever, yellow fever and membranous croup, chicken-pox will hereafter be regarded as a disease within the meaning of Section 79, Chapter 80, of the Public Statutes, and that physicians will be expected to report all cases coming under their notice within the city.

A CENTENARIAN. — Mrs. Abigail Hobart, Nashua, N. H., passed her hundredth birthday last week, and with the exception of slight deafness is in possession

of all her faculties. She has had nine children, five of whom are living, with sixteen grandchildren and twenty-five great-grandchildren.

DEATH AT NEARLY ONE HUNDRED AND ONE. — Mrs. Sally Sawyer Case, who died in Wellesley Hills, Mass., last week, was one hundred years and ten months old. She was present at the funeral services of George Washington.

Miscellany.

AMERICAN GOUT.

LITHÆMIA is so preëminently the form in which gout shows itself in this country, that Da Costa has characterized it as "American Gout." As he has, by his former contributions to the subject, done very much towards giving us clearer views upon the pathology and therapeutics of this hydra-headed morbid state, a brief abstract of an unpublished address which he recently delivered, by request, before the students at the University of Pennsylvania, will prove especially interesting at this time.

By the term lithæmia is understood the morbid condition closely allied to gout, in which lithic or uric acid and other waste products, accumulate in the blood, and cause certain toxic effects, as well as interfere with normal metabolism. Symptoms like those of lithæmia have been found where the urine shows neither uric acid nor urates in excess, nor oxalates. They might be accounted for, perhaps, by the presence of waste products in the urine, such as acetones and peptones, though as yet no accurate chemical researches have been made on this point. It is convenient to retain the term lithæmia as broadly covering the state of the system associated with waste products, even though not specifically uric acid until we find a better name for the whole malady. The title "uricæmia," or even "uric-acidæmia," which has been suggested as a synonym for the older term, is not an improvement, since it implies that the symptoms are due entirely to excess of uric acid, which is taking quite too limited a view of its pathology. In fact, after referring to the theories of Murchison, Roberts, Haig and others with regard to the pathology of the lithæmic or gouty diathesis, Professor Da Costa declared that we must return to neuro-humoral views like those of Sydenham, which are more in consonance with the clinical phenomena than any of those recently proposed. The suggestion of Roberts that a less soluble form of uric acid salts is formed in gouty states (that is, bi-urates instead of normal quadrurates) is highly plausible, and may well account for the tendency to uric acid deposits, which, however, are very much less liable to be encountered in lithæmia than in typical gout. The urine of lithæmic patients, moreover, does not present exactly the same characters which it does in typical gout. It is, as a rule, dense, high-colored, and of higher specific gravity than normal urine. After over-indulgence at the table, the urine may deposit lithates and oxalates, and become darker in color and of higher specific gravity. It may become less abundant than normal, and, by concentration, cause albumin and even casts to appear for a time. This does not, however, indicate the presence of the well-known form of gouty, or contracted, kidney; on the contrary, the kidney is re-

markedly free from inflammation in lithæmia, and both albumin and casts rapidly disappear under appropriate treatment. The heart may be irregular and palpitation be complained of. It is apt to have a weak or muffled first sound; and this is followed by an accentuated, valvular second sound, due to increased arterial tension, which is also indicated by the sphygmograph. In lithæmia, however, cardiac degeneration and valvular disease, such as is common in gout, are remarkably rare, and cannot be said to belong to the clinical history.

The nervous and cerebral symptoms of lithæmia commonly found, are gloom, depression of spirits, irritability of temper, restlessness at night, drowsiness during the day, with disinclination to intellectual effort, jerking of muscles, myalgia, pains in tendons and neuralgia. There is also indisposition to muscular exercise, and the patient is quickly tired; flying pains may appear in various portions of the body, or actual cramps occur. Dyspeptic symptoms are common, though not constant, and there is a tendency to excess of acid in the stomach. Functional derangements of the liver are of frequent occurrence. Vertigo and migraine are prominent symptoms; and the vertigo, like that of stomach disorder, usually appears early in the day; while to increase of acid in the system the attacks of migraine may be ascribed; and the lecturer stated that, for prompt relief of the latter symptom, nothing could excel the effects of administration of hydrochloric acid. This, however, might be like applying ice-water to a gouty inflamed joint, which would promptly relieve the pain, but was attended by some risk of further injury to the patient.

The most prominent causes of lithæmia and gout are excessive eating and drinking, the body is burdened by an undue amount of nitrogen and carbo-hydrates, which the excretory organs cannot remove as fast as supplied, and waste material accumulates in the blood. This is less apt to occur, when active open-air exercise is kept up, than when the life is sedentary or inactive and oxidation is imperfect. The gastronomic achievements of the Emperor Charles V, as detailed by Roger Ascham, were quoted; and the gloom, depression of spirits and increasing melancholy, which finally led to his abdication and retirement to a monastery, were shown to be directly due to lithæmia and gout from excessive eating. Here, gluttony and consequent disease had an important influence upon history. If the emperor had not been lithæmic and gouty, he would not have been so gloomy and melancholic, and he would not have retired to a monastery; if he had not thus retired the Netherlands would not have been given up, and there would have been no Armada. And so great results may be traced to a monarch's self-indulgence.

Lithæmia may be inherited as well as acquired. It may be manifested early in life, and among adults is as frequent among women as men. Exceptionally the symptoms become those of ordinary gout, but joint inflammation does not, as a rule, occur, though there may be some painless enlargement of a distal joint of the little fingers of slow development, possibly several joints may be affected, or the finger-ends may become clubbed.

In the treatment, diet occupies the first place. In many cases restricting the diet to vegetables, especially the green vegetables, will be sufficient to dissipate all the symptoms. In most cases, it will not be advisable

or necessary to adhere strictly to a vegetable diet, and a moderate allowance of meat, if exercise be taken, is permissible, especially the white meat of poultry and fish, may be indulged in without harm. Fats are to be restricted in amount, and carbo-hydrates are to be excluded as much as possible, allowing patients to take only a small quantity of stale bread or biscuit. Most lithæmics declare that sugar does them harm. It is advisable to use especial caution against all articles which the patient finds by experience readily undergo fermentation in the stomach, as the acid aggravates the condition. The drink of the lithæmic should be water only, and enough water should be drunk to keep the kidneys flushed. All forms of alcoholic drinks are bad; but in elderly subjects, accustomed to their use, a very moderate quantity of old whiskey, or of a good claret, may be allowed with the meals. Champagne is particularly bad because it is generally acid in reaction, besides containing much sugar. The importance of fresh-air exercise has been already insisted upon, as the means of increasing metabolism and oxidizing waste. The skin should be kept in good condition, and the sweat-glands rather active. Woollen clothing is advantageous.

In conclusion, the medical treatment may be summed up in a few words. Laxatives, especially salines, are highly useful. Mineral waters are important adjuncts, these waters being better diuretics for these cases than drugs, which irritate or increase still further the blood-tension in the kidneys. To neutralize waste matters in the blood, carbonate of lithia (gr. ii) in capsules, with extract of *nux vomica* (gr. $\frac{1}{2}$), given several times a day, had been found very efficient, the *nux* acting as a general tonic, as well as affecting the heart. Piperazin is still under trial; it has been found of some service in lithæmic conditions.

As regards prognosis, a very favorable view can be taken. Living in accordance with the regimen above-indicated, reducing the quantity of the food to the actual demands of the system so that the in-come shall not be greater than the out-go, restricting the nitrogenized food, carbo-hydrates and fats; drinking only water, avoiding alcohol, and taking daily out-door exercise — this is the road to health for lithæmic sufferers, by pursuing which they will escape their threatened ills, and may in time feel themselves entirely cured of their malady.

THE INTERNATIONAL SANITARY CONFERENCE.

THE result of the International Sanitary Conference thus far has been to make more evident than ever before the difficulties attending any satisfactory control of the out-put of cholera from Mecca at the time of the pilgrimages. The committee on this subject has recommended that a system of medical inspection of pilgrims landing at ports of the Persian Gulf be established; but how it is to be organized, or in what way it is to be controlled, was not mentioned. The chief attention has been directed to the sea routes, although the greatest danger has in most years been from the land routes, over which there has been little or no control thus far.

The French and English delegates have differed a good deal over the conditions of port quarantine, the position of the British representatives, that to stop healthy passengers and a healthy ship does not prevent

but actually creates danger, being strengthened by Dr. Arnaud's description of the quarantine station at the island of Camaran in the Red Sea, where the accommodation is so bad that the disease is spread to passengers and crews detained there. "It is simply a dépôt of cholera, and there have been more epidemics since the opening of this quarantine station than there were previously." Great distrust is felt as to the intention or willingness of Turkey to carry out any agreement and as to the ability of the Persian Government to do so.

The inquiry of one of the United States delegates whether the Conference could not establish rules by which emigrants could be watched, examined, or controlled in such a manner as should prevent them from carrying over to the United States the germs of cholera, small-pox, and kindred diseases, opened up a wide field for discussion. He said, very fairly, that it was all very well to impose medical inspection on Mahomedan pilgrims embarking for Mecca, but why not take similar precautions with respect to emigrants embarking for America? The action of the Conference on this proposition will be watched with interest.

Socially the Conference has been an unprecedented success. The delegates have been entertained at dinners, balls and fêtes by public and private persons, with untiring hospitality.

Correspondence.

THE DIAGNOSIS OF SMALL-POX.

BOSTON, March 13, 1894.

MR. EDITOR:—The rare occurrence of small-pox in Massachusetts during the past twenty years (and since the great epidemic of 1872-73) makes it more than probable that scarcely one in ten of the physicians now in active practice has ever seen a case of this disease. When cases occur in the practice of young physicians, it not unfrequently happens that an error in diagnosis is made, especially during the first week of illness and when the disease is of a mild type. In consequence of such mistaken diagnosis, undue exposure has occasionally taken place, and the health of the community has suffered.

The writer has known several such instances during the past six months, and would therefore respectfully suggest to all young practitioners who have not had a considerable experience with small-pox, that they should in every doubtful case, request a consultation with some older practitioner who has had opportunity to see cases of this character. Such a course might not only prove advantageous to the young practitioner, but also to the community at large.

Respectfully yours, SENEX.

ARRANGEMENTS FOR ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

BOSTON, March 10, 1894.

MR. EDITOR:—Elaborate arrangements are being made in San Francisco for the reception and entertainment of the American Medical Association at its annual meeting in June. Special trains will run from Chicago, leaving on May 28th. It is expected that round-trip tickets will be furnished at the price of a single fare, with choice of returning by other routes. If a sufficient number attend from New England, special cars will be furnished from Boston. Members may be accompanied by friends.

Further information may be obtained by addressing,
HENRY O. MARCY, M.D.,
180 Commonwealth Avenue, Boston.

METEOROLOGICAL RECORD.

For the week ending March 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S..25	30.70	23	23	6	33	47	40	N.W.	S.W.	7	7	O.	0.11
M..26	30.14	23	29	17	87	50	68	N.E.	N.	10	18	O.	
T..27	30.43	26	31	20	53	72	62	N.	S.E.	12	7	C.	
W..28	30.34	34	41	25	74	80	77	S.W.	S.W.	5	10	C.	
T..1	30.16	39	44	34	76	82	79	S.W.	S.W.	6	4	F.	
F..2	29.92	44	55	32	74	61	68	S.W.	W.	6	4	F.	
S..3	30.16	44	50	39	85	51	60	N.W.	N.W.	15	15	C.	
☾	30.25	39	23				65						0.11

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☾ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 3, 1894

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.	
New York	1,891,306	357	343	15.51	18.81	6.93	1.65	2.75	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	—	—	—	—	—	—	—	
Brooklyn	978,394	431	153	16.79	23.46	7.82	1.84	.69	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,387	231	73	12.47	10.81	7.74	.13	.43	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,131	145	44	4.14	26.22	1.38	—	—	
Cincinnati	305,000	133	45	7.50	18.75	3.75	—	—	
Cleveland	200,000	96	44	18.54	18.54	5.15	2.06	1.03	
Pittsburg	283,709	—	—	—	—	—	—	—	
Milwaukee	250,000	89	45	11.20	13.44	2.24	2.24	3.36	
Nashville	87,754	32	11	9.39	12.62	—	—	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	27	8	7.40	40.70	—	—	3.70	
Fall River	87,411	26	10	15.40	19.25	7.70	—	—	
Lowell	87,191	32	5	18.78	18.78	3.13	3.13	—	
Cambridge	77,109	39	16	5.12	22.04	—	5.12	—	
Lynn	62,656	19	7	21.04	10.62	—	—	—	
Springfield	48,684	11	3	9.09	18.18	—	—	—	
Lawrence	48,365	—	—	—	—	—	—	—	
New Bedford	45,888	22	5	9.10	9.10	—	9.10	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	6	2	16.66	—	—	—	—	
Brookton	39,140	—	—	—	—	—	—	—	
Haverhill	31,396	8	2	12.50	25.00	12.50	—	—	
Chelsea	30,264	—	—	—	—	—	—	—	
Malden	29,394	10	2	—	—	—	—	—	
Newton	27,558	12	1	8.33	8.33	8.33	—	—	
Fitchburg	27,146	9	4	11.11	22.22	—	—	—	
Taunton	26,972	9	3	11.11	—	—	—	—	
Gloucester	26,688	—	—	—	—	—	—	—	
Waltham	22,068	6	2	—	16.66	—	—	—	
Quincy	18,642	—	—	—	—	—	—	—	
Pittsfield	18,602	3	0	—	66.66	—	—	—	
Everett	16,565	4	2	50.00	—	50.00	—	—	
Northampton	16,331	5	1	—	—	—	—	—	
Newburyport	14,073	2	1	—	50.00	—	—	—	
Amesbury	10,920	2	1	—	50.00	—	—	—	

Deaths reported 2,303; under five years of age 849; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 332, acute lung diseases 469, consumption 258, diphtheria and croup 137, measles 31, scarlet fever 34, diarrhoeal diseases 27, whooping-cough 20, small-pox 18, cerebro-spinal meningitis 13, typhoid fever 18, erysipelas 11, malarial fever 3, puerperal fever 1.

From diarrhoeal diseases New York 10, Cleveland 1, Milwaukee 3, Washington and Fall River 2 each, Brooklyn, Boston, Springfield, Somerville, Salem and Fitchburg 1 each. From whooping-cough New York 7, Brooklyn 4, Cleveland and Nashville 3 each, Washington and Cincinnati 2 each, Boston 1. From small-pox Brooklyn 8, New York 6, Boston 4. From cerebro-spinal meningitis New York 7, Brooklyn and Lynn 4 each, Boston, Worcester and Marlborough 1 each. From typhoid fever New York 5,

Brooklyn and Lowell 4 each, Boston 3, Cleveland 2. From erysipelas Brooklyn 4, New York 3, Boston 2, Cleveland and Taunton 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 3, 1894, TO MARCH 9, 1894.

Leave of absence for one month is hereby granted CAPTAIN R. B. BALL, assistant surgeon, U. S. A., Fort Monroe, Va.

CAPTAIN R. W. JOHNSON, assistant surgeon, U. S. A., will proceed to Fort Monroe, Va., for temporary duty, during the absence on leave of CAPTAIN R. B. BALL, assistant surgeon. Upon the return of the latter from leave, Captain Johnson will return to his station, Washington Barracks, D. C.

FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, U. S. A., is relieved from temporary duty at Boise Barracks, Idaho, and ordered to return to his proper station, Presidio of San Francisco, Cal. Par. 7, S. O. 54, Hdqrs. of the Army, A. G. O., March 5, 1894.

Leave of absence for one month is granted MAJOR TIMOTHY E. WILLCOX, surgeon, U. S. A.

The leave of absence granted MAJOR JOHN D. HALL, surgeon, U. S. A., is extended one month.

Leave of absence for four months, to take effect on or about August 10, 1894, is granted CAPTAIN HENRY I. RAYMOND, assistant surgeon.

MAJOR JOHN VAN R. HOFF, surgeon, U. S. A., is hereby assigned to the charge of the office and duties of the medical director, Hdqrs. Department of the East, during the temporary absence of COLONEL JOSEPH R. SMITH, assistant surgeon-general, medical director of the Department.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 10, 1894.

F. W. OLCOTT, passed assistant surgeon, from Naval Hospital, New York, and to the "Richmond."

S. S. WHITE, passed assistant surgeon, from the "Richmond" and to the Naval Academy.

L. W. CURTIS, passed assistant surgeon, from the Naval Academy, Annapolis, and wait orders.

G. T. LUMSDEN, passed assistant surgeon, from the "Kearsarge" and wait orders.

W. H. JONES, medical inspector, ordered before the Retiring Board.

C. E. RIGGS, assistant surgeon, from Naval Hospital, Mare Island, Cal., and to Naval Laboratory and Department of Instruction, New York.

D. N. BERTOLETTE, surgeon, and J. M. MOORE, assistant surgeon, ordered to the "Atlanta."

J. E. PAGE, assistant surgeon, ordered to examination preliminary to promotion.

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Wednesday evening, March 21st, at 8 o'clock, by Dr. J. J. Putnam. Subject, "The Present Status of the Therapeutics of Nervous Diseases." Physicians are cordially invited.

AMERICAN SURGICAL ASSOCIATION.

The annual meeting of the American Surgical Association will be held in the lecture-room of the Medical Department of the Columbia College, Washington, D. C., May 29, 30, 31 and June 1, 1894. The special subjects for discussion so far arranged are:

I. "The Surgical Treatment of Empyema," by John Ashhurst, Jr., M.D. Discussion opened by Drs. N. P. Dandridge, C. B. Nancrede, T. F. Prewitt and DeF. Willard.

II. "Methods of Teaching Surgery," by J. S. Billings, M.D. Discussion opened by Drs. J. C. Warren, N. Senn, W. W. Keen, E. M. Moore, W. T. Briggs and Hunter McGuire.

III. "The Surgery of the Kidney," by L. M. Tiffany, M.D. Discussion by Drs. M. H. Richardson, H. H. Mudd, C. H. Mastin and Ford Thompson.

IV. "Methods of Controlling Hemorrhage in Amputation at the Shoulder," by W. W. Keen, M.D. Discussion by Drs. Roswell Park, C. B. Porter and J. William White.

Fellows who desire to present volunteer papers are requested to send the titles of the papers to the address of the Business Committee, 1429 Walnut Street, Philadelphia, not later than April 18, 1894.

J. R. WEIST, M.D., Secretary.

AMERICAN MEDICAL ASSOCIATION.

SAN FRANCISCO MEETING, JUNE 5-8, 1894.

The Committee of Arrangements has secured Odd Fellows' Hall Building, Corner of Market and Seventh Streets, for the meeting June 5, 1894. Assembly Hall will be used for the general meeting, the twelve smaller halls for Section work. The engagement carries three of these rooms on Monday for accommodation of associate organizations, as that of the Editors, Colleges, etc.

Headquarters for the Association have been located at the Palace Hotel, corner of Market and Montgomery Streets, only four blocks from the place of meeting.

Post-Office Section K is located in the Palace Hotel, on the office floor, adjacent to the registration room, where members can receive all mail matter by having it so addressed.

R. H. PLUMMER, Chairman.

SECTION ON SURGERY AND ANATOMY.

It is proposed to devote a portion of the time of this Section to the systematic consideration of a few selected subjects, upon which papers, each not occupying more than ten minutes will be read. It is hoped that speakers discussing these papers will confine their remarks to brief addresses of five minutes' length.

The topics and papers to be so presented are as follows:

(1) Malignant Growths; (2) Tubercular Disease of Joints; (3) Hernia; (4) Hemorrhoids, Fistule and Fissure; (5) Fractures; (6) Obstruction to Urination in the Male.

Members who have specimens or patients to exhibit bearing on these topics or who wish to make remarks in the discussion of them are cordially invited to be present during the meetings of the Section. The titles of other papers to be presented to the Section will be published when the programme of the meeting of the Association is issued by the Committee of Arrangements.

JOHN B. ROBERTS, Chairman,
1627 Walnut Street, Philadelphia.

LLOYD W. MCRAE, M.D., Secretary, Atlanta, Ga.

RECENT DEATHS.

FRANCIS FLINT FORSAITH, M.D., M.M.S.S., formerly of Weymouth, Mass., died in Providence, R. I., March 10, 1894, aged sixty-nine years.

DR. ALBERT LUCKE, Professor of Surgery in the University of Strassburg and the colleague of Billroth in editing the *Deutsche Chirurgie*, died February 28th.

DR. DON VINCENT A. GARCIA, President of the Medical and Natural Science Society of Bolivar, Columbia, died recently.

BOOKS AND PAMPHLETS RECEIVED.

The Young Man in Business. By Edward W. Bok. Philadelphia. 1894.

The Forms of Peritonitis, Their Relation to Appendicitis and the Etiology of Each. By Roswell Park, A.M., M.D. Reprint.

A Critical Review of the Seventh Decennial Revision of the Pharmacopoeia of the United States of America. By George M. Beringer, A.M., Ph.G. Reprint. 1894.

A Practical Treatise on the Diseases of the Hair and Scalp. By George Thomas Jackson, M.D. New, revised and enlarged edition. New York: E. B. Treat. 1894.

A Speech on the Principles of Finance. By Victoria C. Woodhull, delivered at Cooper Institute, New York City, Thursday, August 3, 1871, and throughout the United States of America. London. 1894.

The Strike at Shane's. Goldmine Series No. 2, Sequel to Black Beauty. A Prize Story of Indiana. Written for, and revised, copyrighted and published by The American Human Education Society. Boston, 1893.

The Physician's Wife and the Things that Pertain to Her Life. By Ellen M. Firebaugh. Illustrated with forty-four photo-engravings of sketches from life. Philadelphia: The F. A. Davis Co. London: F. J. Reisman. 1894.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., F.R.C.P., Edin., F.R.S., Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Vol. II, Part III. Edinburgh: Printed by T. & A. Constable at the University Press. 1893.

Supplement to the Reference Handbook of the Medical Sciences. By various writers. Illustrated by chromolithographs and fine wood-engravings. Edited by Albert H. Buck, M.D., New York City. Volume IX. New York: William Wood & Co. 1894.

A Treatise on Headache and Neuralgia, including Spinal Irritation and a Disquisition on Normal and Morbid Sleep. By J. Leonard Coming, M.A., M.D. With an appendix. Eye-strain, a Cause of Headache. By David Webster, M.D. Illustrated. Third edition. New York: E. B. Treat. 1894.

Original Articles.

THE DIAGNOSTIC AND PROGNOSTIC IMPORTANCE OF LEUCOCYTOSIS.¹

BY RICHARD C. CABOT, M.D.,

Medical Intern, Massachusetts General Hospital.

THE material for this paper consists largely of blood counts, 332 in all, which I have made at the Massachusetts General Hospital within the last year; and for all of it I am indebted to the kindness of the visiting physicians and surgeons of the hospital, who have given me the freest access to their cases at all times. I am under special obligations to Dr. F. C. Shattuck and Dr. R. H. Fitz.

It is important to know exactly what leucocytosis is before we attempt to estimate its diagnostic or prognostic value. It is a very difficult idea to define. Not one of the authors whom I have consulted have seemed to me to give a satisfactory definition, that is, one which sufficiently distinguishes it from leucæmia. Von Jaksch,² for instance, distinguishes it from leucæmia by its transitoriness, but it may last as long as leucæmia. Virchow defined it as an increase in the white cells of the blood due to a stimulation of the lymph glands, but in typhoid the increased glandular activity causes no leucocytosis.

Eichhorst, Jürgensen, Seifert, Müller, Strümpell, Vierordt and Pée³ in their text-books give it to be understood that leucocytosis is transitory, symptomatic, and less in degree than leucæmia; but counts as large as those in leucæmia have repeatedly occurred in cases where none of the characteristic lesions of leucæmia were present, especially in connection with malignant disease and the anæmiæ of children (Von Jaksch).

Very probably many of the reported cases of acute leucæmia where nothing was found at autopsy, were simply leucocytosis. The reported developments of pseudo-leucæmia into leucæmia were probably all leucocytosis. At any rate, I have not been able to come across a single such case where the crucial test of the differential count was applied. The mere increase in the white was held to constitute leucæmia.

On the whole, the best definition that I have been able to arrive at is this: Leucocytosis is the presence in the blood of an increased number of white cells of the same varieties morphologically as those in normal blood, a plurality and generally an overwhelming plurality being polynuclear.

In leucæmia many of the varieties of white cells present have never yet been found in normal blood, although every one of them has now been found in diseases other than leucæmia.

In leucæmia the polynuclear cells are never increased, and are generally in minority. In leucocytosis the polynuclear cells are generally much increased, and are never in a minority.

But we cannot say, as Friedländer⁴ does in his short and pungent definition, that: "Leucocytosis is an increase in the polynuclear or other varieties of white cells present in normal blood"; for in pure lymphatic leucæmia there are no varieties other than those found in normal blood, the diagnosis being made

on the overwhelming majority of lymphocytes, or small mononuclear white cells, taken in connection with the other physical signs.

Practically, 90 out of 100 leucocytoses are perfectly easily distinguishable from leucæmia by their enormous percentage of the polynuclear varieties, 90 to 98 per cent. being the rule.

We cannot, then, make the distinction from leucæmia simply by the count. As an example of this, let me cite a case occurring in the wards of Dr. Maurice H. Richardson last summer, in which a mistaken diagnosis was made for lack of a differential count.

A. M., single, age twenty-one, entered with a diagnosis of malignant tumor. She was so pale that an examination of the blood was made. This showed an overwhelming number of white cells, 1 to 89 red; and taking this fact in conjunction with the position and nature of the tumor, a diagnosis of leucæmia was made. The tumor was in the region of the spleen, projecting below the left ribs, and it was thought that a notch was felt upon its upper surface. The patient was transferred to a medical ward; and here, after considerable delay, a triple stain and differential count of the blood was made, which at once showed that it was not leucæmia, for 95 per cent. of all the white cells present were of the polynuclear type. Not long after this, the tumor began to assume a position near the median line, and a zone of resonance appeared between the left ribs and the tumor. During her stay on the medical side she had several well-marked chills. She was transferred to the surgical wards again, and the tumor was tapped in several directions, nothing but a little fecal matter being obtained.

She failed rapidly, decided to go home, and was lost sight of; but her death was reported in the papers within a few weeks. No autopsy. This was probably a case of large malignant new growth and the count, 1 to 89, was not higher than has been repeatedly found in large abdominal tumors. I have collected eight cases of malignant growths from literature in which the count was 1 to 50 or greater.

On the other hand, we may have leucæmia with no increase in the number of white cells. A few months ago Dr. Hubbard, of Taunton, sent me some blood-slides from a case of leucæmia, Mrs. S., which I had seen and counted in the hospital a year before in the service of Dr. Shattuck and which is now under Dr. Hubbard's care in Taunton. *They showed no increase at all in the white cells*; but on making a differential count, a large proportion of the white cells present were found to be myelocytes, so large a proportion as could only occur in leucæmia. The patient has still all the other signs and symptoms of leucæmia. In leucocytosis then, as distinguished from leucæmia, we have only those varieties of white cells present which are found in normal blood.

We have said that leucocytosis is an increase in the white cells over the normal number. This normal number has been somewhat disputed; but the majority of careful observers in late years agree in placing it at or near 7,500. Any variation, of more than 1,500 above or below this number is to be considered abnormal.

Now, leucocytosis is found in a considerable number of physiological conditions. This must be carefully borne in mind if we are to rightly interpret its significance in disease.

Digestion.—We have in the first place leucocytosis

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, January 17, 1894.

² Von Jaksch: *Klinische Diagnostik*, 1889.

³ Pée: *Untersuchungen über Leukocyten*; *Inaug. Dissert.*, Berlin, 1890.

⁴ Friedländer: *Microscopische Technik*.

during digestion. This has been doubted by many authors; but the weight of authority is in favor of it, at any rate under certain conditions. Two and one-half hours after a meal rich in proteids the blood of most normal persons shows an increase of white cells varying from 1,000 to 7,000 above the normal.

Rieder,⁶ who has made a most thorough investigation of the subject, says that in adults the digestion leucocytosis rarely if ever goes above 13,000. Von Jaksch states that it may be so great as to cause a ratio of 1 white to 100 red, but he gives no cases in support of his assertion; nor does Klein,⁷ who asserts that the white cells may reach 20,000 simply from digestion.

In children it may be a good deal higher, but never, I think, so high as the estimate of von Jaksch. My own investigations of this matter agree entirely with those of Rieder. In 21 cases, on various diets, I have never seen it rise above 13,000. In 13 of these it was absent altogether.

Pregnancy.—Next may be mentioned the leucocytosis of pregnancy and the puerperal state, which occurs in about two-thirds of all cases; it is generally moderate, not over 14,000. The leucocytosis of pregnancy might be of value in excluding those cases of phantom tumor simulating pregnancy. This has not been done as far as I know.

Children.—New-born children have a very considerable leucocytosis; which falls gradually, until at the sixth year the count becomes normal. At no time during the first year is 12,000 abnormal. Besides these physiological conditions, we must bear in mind hæmorrhage, which, if large, may cause considerable increase soon after the loss of blood; also the leucocytosis occurring just before death, so-called leucocytosis of agony. If these causes are excluded, any leucocytosis may be called pathological.

Typhoid.—Taking up now the diseases in which the count of leucocytes is important, I shall begin with typhoid. Most febrile diseases are accompanied by leucocytosis; and Strümpell, in the edition before the last, of his "Text-Book of Medicine," makes the mistake of saying that leucocytosis is present in typhoid. In this he only follows the lead of such authorities as Virchow, Vierordt and others, who, judging apparently from *a priori* considerations, have stated that in all diseases accompanied by increased activity of the lymph glands, increase of white cells should be found. As a matter of fact, however, the overwhelming majority of observers, and almost all the facts, are on the other side. As mentioned in Osler's text-book, Thayer has counted nearly 150 cases, not reported in detail as far as I know, in which no increase was found. Rieder, v. Limbeck,⁸ Pick⁹ and others have come to similar conclusions. Leucocytosis occurring in typhoid points to some complication, such as thrombosis, pneumonia, abscess, etc. The diagnosis between relapse and some of these causes of temporary rise of temperature may, perhaps, be assisted by the blood-count. In a patient of Dr. Shattuck's, who had just recovered from a thrombosis during convalescence of typhoid, the temperature began to rise again. The question arose, whether this was due to the smouldering remains of the thrombosis (which, when active, had

caused both fever and leucocytosis), or whether the patient was having a relapse. The blood-count was normal; two days later rose-spots appeared, and the subsequent course of the case confirmed the diagnosis of relapse as indicated by the blood-count.

In the last few months I have counted 79 cases of typhoid fever. In only one was leucocytosis present, and that was in a child of four, where the normal number of white cells was so great that the count in this case, 1 to 300, may not be really leucocytosis at all. In 49 of my cases the number of white cells was less than the normal, and this agrees with most of the latest observations. Lack of time prevented my making more than one count in each case of typhoid.

Cold baths, as recently observed by Thayer, may produce a temporary increase. In two of my cases I was able to confirm this observation.

Now this fact, the absence of leucocytosis in typhoid, is a very important one in the diagnosis of that disease, for a large number of affections with which typhoid is likely to be confounded *do* show leucocytosis. Local suppurations, for instance, which are sometimes difficult to distinguish from typhoid fever, almost always produce leucocytosis. Purulent meningitis has shown in every case which I have been able to find in literature (only seven in all) a very marked leucocytosis. I have only one case to add to this.

Last September, a man entered the Massachusetts General Hospital with a diagnosis of typhoid fever. He had the typical "typhoidal" aspect. Low, muttering delirium, heavy coated tongue, temperature 104.2°, pulse 115, respiration 22. He could give no account of himself, and complained of nothing in particular. Physical examination was generally negative. No rose-spots were present, no spleen was felt, and there was no distention. The diazo reaction was present. In the absence of any other obvious diagnosis, the case was considered one of typhoid. The blood-count, however, showed 22,000 white cells. Next morning the patient's brother arrived, and stated that the patient had been suffering for years with middle-ear catarrh. There was no discharge from the ear; but Dr. Green found purulent otitis, with perforation in the left ear, and made a diagnosis of meningitis. The patient became unconscious within a few hours, and died two days later. No autopsy.

Ewing reports a number of cases in the *New York Medical Journal*, December 16, 1893, where the diagnosis was very difficult between pneumonia and typhoid until an examination of the blood cleared it up. No such difficulty has occurred in the cases I have seen, but, should it arise, the blood would undoubtedly decide in the great majority of cases.

Typhoid vs. Appendicitis.—A diagnosis between typhoid and appendicitis has presented considerable difficulty in several cases which I have seen at the hospital this year. As is well known, the pain of appendicitis may be very slight, and the tenderness no greater than is occasionally found in typhoid. The histories in a certain number of cases are not markedly different. In two such doubtful cases where I have found no leucocytosis, a diagnosis of typhoid has been confirmed by the subsequent course of the disease.

Three years ago, I saw in the hospital, in the service of Dr. Shattuck, a case in which the diagnosis between typhoid and some internal suppuration was for several weeks doubtful, until at last an abscess of the liver came to the surface and was opened. In

⁶ Rieder: Beiträge zur Kenntnis der Leukocytose, Leipzig, 1892.

⁷ Klein: Volkmann's Sammlung Klinische Vorträge, Dec. 1893.

⁸ Von Limbeck: Grundriss einer Klin. Path. des Blutes, Jena, 1892.

⁹ Pick: Klin. Beobachtungen über die Entzünd. Leukocytose Prag. Med. Wochenschrift, 1890, No. 24.

such a case as this I think the blood examination would have settled the difficulty at once.

Grippe.—Between grippe and typhoid the blood does not help us, for in neither are the white cells markedly changed. I have counted but five cases of uncomplicated grippe, but in none of these, and in but few of those which I have found in literature, has increase been present.

Between general sepsis and typhoid a blood-examination was of value in a case occurring this autumn in Dr. Shattuck's service. Patient presented symptoms and signs of acute polyarticular rheumatism with fever. The fever came down under salicylates, but soon rose again, and the man became wildly delirious. His delirium persisted after the salicylate was stopped. Several joints continued swollen and tender. The fever was very moderate, ranging between 99° and 101°. There were no rose-spots and no spleen. The question arose as to whether it was a case of sepsis with localization in the joints, or whether it was a case of typhoid supervening on an arthritis of some kind. The blood-count, which was repeated several times, showed always a perfectly normal blood except for a slight anemia. The subsequent course of the case, during which he remained for nearly three weeks more or less delirious, convinced Dr. Shattuck that it was a case of typhoid fever.

Tubercle.—As between typhoid and incipient pulmonary tuberculosis or tubercular meningitis, the blood does not give us any help. For in pulmonary tuberculosis all observers agree that leucocytosis is present only in advanced cases with high fever (that is, I suppose, in those where the infection is mixed) and in tubercular meningitis there is no leucocytosis, so far as observed. My own counts in tuberculosis in eleven cases have coincided with the results obtained by others. In two cases of galloping consumption and two cases of empyema with phthisis, leucocytosis has been present. In the other cases, consisting of two cases of tubercular peritonitis, two of early phthisis, two of tuberculosis of the kidney and one of general miliary tuberculosis, no increase has been present. I have only been able to find four cases of miliary tuberculosis in literature where counts have been made. In none of these was there any increase, so that in these cases of tuberculosis which would be likely to be confounded with typhoid the blood does not help us. The same is true of malaria, where a normal blood-count is found.

I stated before that the majority of cases of typhoid show by the second week leucopenia, or lack of white cells. Cases of debility with fever, and with or without gastro-intestinal symptoms, which are sometimes difficult to tell from typhoid, may, perhaps, be distinguished from it in some cases by their normal count. Two cases of acute gastro-intestinal catarrh with fever, which I counted with a view of finding out the cause of the fever, both showed a decided increase in white cells. This might be of use in a diagnosis of typhoid.

Pneumonia.—It has long been known that pneumonia shows a marked increase in white cells. I published the blood-counts of 48 cases last summer, in all but 5 of which leucocytosis was present.⁹ I dwelt then upon the prognostic significance of the absence of increase in the white cells, for all of the 5 which had no increase died. Since then I have counted 24 more, or 72 in all.

I will speak first of the diagnostic importance of blood in pneumonia. In the cases that I have seen it has helped mostly in distinguishing pneumonia from grippe, or rather in anticipating the complication of pneumonia in grippe. In three cases seen last month where no physical signs of pneumonia were present, where the history might do either for grippe or pneumonia, the high leucocyte count made me suspect pneumonia, and this was verified in each case by the appearance of signs of consolidation within thirty-six hours.

It is important before any treatment or any prognosis to make this distinction between grippe and pneumonia as early as we can, especially if we are in the habit of treating grippe with phenacetine.

Ewing, in the article mentioned above, says that he found a connection between the count and the amount of physical signs, and also between the count and the vigor of the systemic reaction. In my cases I have not been able to establish any such connection. High counts have been present in athenic and in fatal cases repeatedly; low counts in those with much lung substance involved. Of the 24 new cases since my last report on pneumonia, two have had no leucocytosis. One of these died. The other did not; but the course of the case was so interesting that I think it will be worth reporting in a little more detail.

The patient, L., was seen in Dr. Fitz's wards a few weeks ago, and was evidently a very mild case of pneumonia. Temperature and pulse were not high; there was no cyanosis, and but little lung involved. The man was perfectly sensible; and after the count, which showed a normal number of leucocytes, I felt as if the theory were certainly at fault in this case. The man was evidently going to get well. Within twelve hours the temperature rose to 105°; the pulse to 160, and became so weak as to be almost uncountable. The man became much cyanosed and wildly delirious. He seemed almost moribund, and remained in this condition for forty-eight hours. At the end of this time he began to improve a little. The count was repeated, and found to show a marked increase in the white. He ultimately recovered. Now here was a case where from ordinary appearances a good prognosis would have been given; but if we could have anticipated what his condition would be twenty-four hours afterwards, the prognosis would have been the very reverse. *The blood did anticipate it*; so that this case does not seem to me to be one which tends to upset the prognostic importance of the absence of leucocytosis in pneumonia. Of my 72 cases, 7 had no leucocytosis; 6 of these have died; and the other came so near it that if it had been foreseen what his condition would be, a very unfavorable prognosis would have been given. It is interesting here to see that when his condition began to improve, the leucocyte count rose.

Phthisis and Pneumonia.—Between pneumonia and phthisis in the early stages the blood-count might be of value, but it is not in this stage of phthisis that the difficulty of diagnosis would be likely to occur. Pleurisy with serous effusion shows, according to v. Limbeck and Pick, moderate leucocytosis in febrile stages, none in the quiescent afebrile stage. I have counted six cases, two in the febrile stage and four in the afebrile stage; and my results are entirely in accord with those of the writers above mentioned. Rieder thinks (on the evidence of a very small number of counts) that tubercular effusions give no increase in leucocytes, even when febrile.

⁹ Cabot: Boston Medical and Surgical Journal, August 3, 1893.

In three cases of empyema, I have found moderate leucocytosis, but not greater than that present in the febrile stages of serous effusions, so that no help is given by the blood-count, as between empyemas and serous effusions in the febrile stage.

Scarlet Fever and Measles.—Between these two diseases the blood is said by several authors to be of greater diagnostic importance, leucocytosis being present in scarlet fever and not in measles. I have had no personal experience in these diseases. According to Koczetkow, leucocytosis is present in scarlet fever in the incubation stage early as six days before the eruption.

In *Rheumatism* but few counts have been made. In the febrile stages the white cells are apparently increased. The same is true of erysipelas. In two cases I have found marked increase.

Diphtheria shows as high a count as any febrile disease. According to v. Limbeck the higher the count the worse the prognosis.

In *Follicular Tonsillitis* Halla has found moderate leucocytosis; and I have found the same in three cases, all febrile ones.

Experiments in the inoculation of animals with cultures of various pyogenic cocci show that those animals in which no leucocytosis is present generally die. This has been observed in a number of cases in the inoculation experiments at the Pasteur Institute last year.

Malignant Disease.—Leucocytosis occurs in a certain proportion of cases of malignant diseases. Just what that proportion is and what relation the count bears to the presence of the disease in one or another organ, or to the kind of disease, does not seem to me to have been settled as yet.

V. Limbeck found it most frequently in soft, growing tumors, and constantly in osteo sarcoma. Here the count may be of great importance in helping the diagnosis between malignant disease or some other form of joint affection. Tuberculosis, for instance, as before mentioned, does not cause an increase in the white cells; nor does chronic arthritis sicca, nor gonorrhoeal arthritis.

Gastric Cancer and Ulcer.—Schneider has, during the last year of two, maintained the thesis that the examination of the blood is of great importance in the diagnosis between cancer and ulcer of the stomach. He has found leucocytosis in all of 12 cases of cancer of the stomach and failed to find it in a number of ulcers. It is important here, however, to rule out all these cases of ulcer where profuse hæmorrhage has taken place, or where a long-standing chlorosis is present, for chlorosis and hæmorrhage both may cause leucocytosis. In cases of ulcer not dependent on these causes, it seems that the count might be of diagnostic value. I have counted only two cancers of the stomach, and there leucocytosis was present. I have counted no ulcers. In the diagnosis between anæmia secondary to malignant disease, and the simple primary or pernicious anæmia, the count is certainly of importance; for in these latter forms of anæmia, no considerable increase is often found, and although the absence of leucocytosis would not be of any great diagnostic importance, its presence might be. Moreover, Klein, the latest and most enthusiastic writer on the subject, states that in malignant disease, even where no leucocytosis is present, a differential count shows a marked increase in the percentage of polynuclear cells. In cancers of the uterus it has been found less often, and in cancer

of the gullet it apparently does not occur, the white cells being decreased.

I have counted 19 cases of malignant disease and found leucocytosis in 12. In my cases a leucocytosis was present wherever cachexia was present, without any particular reference that I can trace to the position or nature of the tumor. The 7 cases where no increase has been present have been mostly small tumors, and all in persons where no cachexia was present. Thus, in a small cancer of the lip, a sarcoma of the testis, and a sarcoma of the abdominal wall, there was no increase. In all of these cases the tumors were small, and there was no cachexia. In one case of cancerous growth filling the whole pelvis, and in another case of very large sarcoma, probably of both suprarenal capsules, both without cachexia, there was no increase. The last of these two cases became cachectic, and several months after the first count the leucocytosis rose proportionally. In one case of multiple sarcoma of the skin where the tumors were very small, although fairly numerous, there was a large increase; but here again the patient was markedly cachectic.

Appendicitis.—I have counted 24 cases of appendicitis, and have been specially interested in these counts, because leucocytosis if constant in appendicitis would be a diagnostic factor of some value. In every case except two where pus was found at operation, leucocytosis was present, the size of the count having, as far as I could judge, no relation to the amount of pus found. In three cases of appendicitis proved at operation to be catarrhal, no increase was present, as was the case in several others whose course made the diagnosis of catarrhal appendicitis probable, although this was not actually verified by operation. The count has seemed to me of real value in some cases where the diagnosis was difficult, between simple colic due to constipation (with or without gastro-intestinal symptoms) and true appendicitis. Two cases where symptoms and signs pointed decidedly towards appendicitis, but where no leucocytosis was present were relieved of all these symptoms within forty-eight hours, by clearing the bowels. The count may be of use, it seems to me, in deciding us whether an enema ought to be given. It is sometimes desirable to give an enema in cases simulating appendicitis to help clear up the diagnosis, but some physicians are afraid to do so for fear of causing a walled-off abscess to break into the general peritoneal cavity. In such cases, if no leucocytosis were present, we might go ahead with a clearer conscience.

Mr. B. entered the Massachusetts General Hospital September 20th, with a diagnosis of appendicitis. For twenty days he had been having pain and tenderness in the region of the appendix, pain being controlled by morphia. The bowels had been loose, he said. There was dullness and tenderness and a distinct tumor in the region of the appendix, with slight pyrexia. The blood-count showed only 8,000 leucocytes. He was given a compound cathartic pill, had a large movement of the bowels, and all symptoms and signs disappeared. V. Limbeck, Rieder, Pick and Koblauck²⁰ all state unconditionally that leucocytosis is present in general septic peritonitis with fever. But in three cases of general peritonitis, two of them with appendix present, no increase of white cells has been present. I do not know how to explain these cases. It is possible that they may be explained in the same way as the

²⁰ Koblauck: Inaugural Dissertation, Berlin, 1889.

absence of leucocytosis in some fatal cases of pneumonia. All these three cases of peritonitis died within twenty-four hours. It may be that the lack of leucocytes is a point in prognosis, pointing to a feeble systemic reaction. It is interesting also that in none of these three cases was there any pain, while in every one of those cases where I found leucocytosis, pain was a marked feature. This would suggest that pus under tension is more likely to cause leucocytosis than where free. The same thing is suggested by counts that I have made in felons and small abscesses in the Out-Patient Department. In three felons, one of which contained less than half a drachm of pus, I found well-marked leucocytosis. In a paronychia with great pain, but without pus, no increase was present.

Pus-Tube.—In 15 cases of pus-tube or pelvic abscess I have never once failed to find leucocytosis. This fact may serve to help in the diagnosis between pus-tube and pelvic abscess, on the one hand, and those pelvic pains with no anatomical basis, and other non-suppurative and non-malignant pelvic affections, such as extra-uterine pregnancy, pelvic hæmatoma, and small ovarian cyst, on the other. In two cases of extra-uterine pregnancy I have found a normal blood-count. I may mention here two interesting cases of severe inflammation under the scalp, following scalp wounds. In one of these I found normal blood-count; and at operation no pus was found, only boggy, water-soaked tissue. In the other I found leucocytosis, and plenty of pus appeared on making a cut.

Septic Hands, etc.—I have counted three septic hands and one septic foot, and always found leucocytosis. The same is true of three buboes and two small abscesses of the neck. One case of mumps showed normal count.

Osteomyelitis.—Two cases of osteomyelitis with deep seated suppuration (as proved by subsequent operation) showed marked leucocytosis, while one with similar symptoms, but normal blood-count, turned out to be rheumatism. Three cases of otitis media were counted. Two of them were purulent and had leucocytosis; one was serous and had none. In one case of housemaid's knee in which the general constitutional symptoms were more marked than usual, so that the presence of pus was thought of, I found large increase in leucocytes; and a few hours after pus was found at operation. Two joint cases, one of the elbow and one of the knee, where before operation the question of pus was seriously entertained, showed normal counts, and no pus was found in either. Besides the three cases of general peritonitis mentioned above, where the indication of the blood-count was wrong, there should be mentioned a large abscess, apparently originating in the liver, which burrowed forward and was evacuated in the epigastrium, and which showed a normal blood-count. I have no idea why the blood-count failed in this case.

Obstruction.—In three cases of intestinal obstruction, one of them so closely simulating appendicitis that it was sent in by a surgeon of the Massachusetts General Hospital with that diagnosis, no leucocytosis has been found.

Carbuncle.—Two cases of carbuncle showed, as was expected, marked leucocytosis.

Cystitis, etc.—Two cases of cystitis, and three cases of endometritis showed normal count, as did two cases of so-called urethral fever following operation on bladder.

Healing Wounds.—On the whole, the cases where the blood has seemed to me of greatest importance have been those where after the operation, the wound having been sewed up tight, the question has arisen whether pus was forming inside. I shall speak of these somewhat more in detail.

CASE I. Frank B. was a case of appendicitis operated on by Dr. Richardson at the end of an attack. A little pus was found, the appendix was excised, and the wound nearly closed, a small strand of gauze, however, being left in. Several days after the operation, there being at the time no external discharge, the temperature rose. The wound seemed perfectly clean. The man was very nervous about himself, and much stirred up at each dressing; and as the temperature never went higher than 101° , there seemed to be considerable doubt as to what the cause of the temperature was. The blood-count in this case showed 52,000 leucocytes; and on opening the wound a large amount of broken-down blood-clot was evacuated, and the temperature came down to normal.

CASE II. Mrs. S. was a case of pus-tube shelled out and sewed up tight. Ten days after the operation the temperature began to look a little like pus. Here again the patient was exceedingly nervous; and, as so often happens, the question was asked and re-asked, whether she was keeping up her own temperature by the state of her mind. The blood-count, however, showed marked leucocytosis, which led to a careful ether examination, revealing a fluctuant mass behind the uterus, from which pus was obtained by puncture.

CASE III. Mr. R. entered the Massachusetts General Hospital in December, under the service of Dr. Porter, with a compound fracture of the thigh. Some days after it had been put up, the temperature began to look like pus, the wound, however, remaining perfectly clean. I counted the blood, and found a marked leucocytosis. A more thorough exploration of the wound revealed a pocket of pus, the evacuation of which brought down the temperature. I was not sure in this case whether the absorption of the blood-clot, such as takes place, I suppose, after any compound fracture would be sufficient to cause leucocytosis. I therefore counted several cases in which there was fever and presumably blood-clot absorption, namely, a hæmothorax, a pelvic hæmatocele, two compound fractures and a crushed foot; in none of these was any leucocytosis present.

CASE IV. Mr. S. was operated on by Dr. Warren for traumatic epilepsy. Nothing special was found, and the wound was closed. Ten days after the operation the temperature rose to 104° , and the patient complained of severe headache and pain in the back. I counted the blood, and found no leucocytosis. Next day the temperature was down. The patient apparently had the grippe.

There is no time to report more cases in detail, but these last cases have seemed to me to be very suggestive and interesting.

CONCLUSIONS.

Only in typhoid and in pneumonia does the number of counts which I have made warrant any conclusion. The absence of leucocytosis in typhoid and its presence in pneumonia (except in the severest cases) seem to me fairly well established and of some diagnostic and prognostic importance.

The number of cases counted among the surgical af-

fections is too few to warrant any conclusions; but they are sufficient, it seems to me, to make it important that the subject of leucocytosis in surgical cases should be studied much more carefully, with a view to its practical diagnostic value. If a felon with half a drachm of pus in it will cause marked leucocytosis, it certainly seems as if the diagnosis of deep-seated suppurations of larger size might be helped out by blood-examinations, as apparently it was in some of the appendix and osteomyelitis cases I have quoted.

Into the interesting and possibly important subject of the diagnostic importance of qualitative changes in the varieties of white cells, which is being so eagerly pushed in Germany just now, I have not undertaken to enter. Its advocates say it is even more important than the quantitative variations dwelt on in this paper.

TECHNIQUE.

In most of the cases reported above I have used the Thoma-Zeiss counter with Hayem's or Gower's solution and a dilution of 1 to 200. So great a dilution is condemned by German writers, as affording too small a number of leucocytes for computation, and so increasing the chance of error. To avoid in part this difficulty, I measured the field of my microscope, using always the same lenses. It happens to measure almost exactly one-quarter of a square millimetre, so that four fields of my microscope are just equal to the whole four hundred ruled squares of the Thoma-Zeiss instrument. By taking four fields in each of the four directions away from the sides of the ruled space of the instrument, we have counted as many leucocytes as we should have done by taking four additional drops from the pipette and counting only the ruled space. As the lines extend out some distance beyond the squares on each side, we can use them as a guide to start us in the right direction; and by using a movable stage, we can be sure of not getting off the track and into fields already counted. After counting one field, the eye is fixed on a corpuscle at the side of the field most distant from the central ruled squares, and then by means of the moving stage the slide is moved until that corpuscle is on the inner edge of the field, that is, that nearest the ruled squares. By counting four fields in four directions, I had with the central ruled space twenty thousand squares as a basis of computation. In each count I did the whole process over with a second drop as well, making forty thousand squares in all. This gives us in most cases from fifty to one hundred leucocytes as a basis of computation, which makes the error considerably smaller.

I have used also the one-third per cent. acetic-acid solution, which makes the red corpuscles invisible, and can therefore be used with much less dilution than the other solution, 1 to 20 being that generally used abroad. I have used generally 1 to 50, and found the results obtained by counting the same blood first with Gower's solution (1 to 200) and then with the acetic acid to be so nearly the same that I have fallen back onto the 1 to 200 dilution, which has the advantage (besides that of needing less blood) that it does not deprive us of the count of red corpuscles, whereby we may check any mistake in our mixing by reference to the ratio of red to white. If the red are invisible (as with the acetic-acid method) we are deprived of this advantage.

MIKULICZ, of Breslau, is under consideration as the successor of Billroth at Vienna.

TWELVE CONSECUTIVE AND SUCCESSFUL OPERATIONS FOR APPENDICITIS.

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MORE has been written upon the etiology, pathology and treatment of appendicitis during the last five years than upon any other disease. Even the daily press has taken up the subject, and expatiated with more or less correctness upon the many phases of this so-called "fashionable disease." The operative treatment is, without doubt, the method of procedure in the large majority of cases. In Bull's collection of cases, treated without operation, there was a mortality of 47.67 per cent.; in Noyes's collection of 100 cases, treated by the Willard Parker operation, there was a mortality of 15 per cent.; while the mortality in the early operation, or during the first three days of the disease, is only 15 per cent. It has been shown that about 84 per cent. of those who die, do so within the first five days. I am fully convinced that the early operation by a skilful surgeon, will save the greatest number of lives. When the disease is of several days' duration, and the symptoms and signs continue, the Willard Parker operation is the operation of election. The mortality is about one per cent. in cases operated upon between the attacks in recurrent cases of appendicitis.

CASE I. J. W., male. Age nineteen years, telegraph-operator and switchman on the N. Y., P. and B. R. R.

May 4, 1891, while witnessing a base-ball game, felt a slight pain across the abdomen. The pain continuing, his mother administered a dose of castor oil, which produced a small movement.

May 5th. Remained in bed all day, and was attended by a homoeopathic physician, who prescribed some medicine to relieve pain.

May 6th. About 4 A. M. he had a very severe paroxysm of pain, which was almost unbearable. Tincture opii was given, and he experienced some relief. Nausea and vomiting. I saw him for the first time at 10 A. M.; his temperature was 103.5°, and pulse 120. He had pain over McBurney's point, and tympanitic percussion over right iliac region. Evening temperature 103.5°.

May 7th. Temperature 103°, pulse 120. Dulness on percussion, and sense of resistance in right iliac region. Rigidity of right abdominal muscles.

May 8th. No marked change in symptoms. Temperature 102.2°, pulse 110.

May 9th. Temperature, morning 100.6°; evening, 101.8°. Mass in right iliac region defined. Consultation with Dr. Noyes. Operation advised.

May 10th. Operation at 10.30 A. M. Present, Drs. Noyes, Mitchell and Collins. A vertical incision four inches long was made, two inches to the left of the anterior superior spinous process of the ileum, through the abdominal wall, which was not more than three-eighths of an inch in thickness, into a circumscribed intra-peritoneal abscess. About four ounces of very fetid pus was evacuated. A counter-opening was made in the loin, and a drainage-tube drawn through both openings. Coils of agglutinated intestine could be felt through the opening. The cavity was washed out with a 1 to 2,000 bichloride-of-mercury solution, and an antiseptic dressing applied. Four

silk sutures were used to partially close the anterior wound.

May 11th. Patient rallied well from the effects of the operation. Morning temperature 101°, evening, 102.2°. The wound was irrigated daily with a 1 to 2,000 bichloride-of-mercury solution, and an antiseptic dressing applied.

May 12th. Morning temperature 99.5°, evening temperature 99.8°.

May 13th. Free fecal discharge from wound. Morning temperature 98.8°, evening 99.5°.

May 14th. Two of the sutures were removed. Morning and evening temperature 98.8°, and pulse 96.

May 15th. Temperature and pulse normal. Only a slight discharge of pus. Two remaining sutures removed.

May 22d. Drainage-tube removed.

June 2d. Wounds entirely healed.

June 5th. Able to sit up.

June 6th. Four weeks from the day of operation ; went out of doors.

July 6th to 15th. Had an attack of cholera morbus.

August 31st. Ventral hernia, about the size of a walnut, near the centre of the anterior wound. Truss recommended.

December 6th. Hernia scarcely perceptible.

CASE II. F. E. P., male, age twenty-eight, baker. This man was taken with severe general abdominal pain and vomiting, October 2, 1892. Next day pain was present on deep pressure over McBurney's point. Occasional attacks of vomiting.

October 4th. Consultation with Dr. Noyes. Dulness on percussion in right iliac region; localized point of pain and circumscribed sense of resistance. General condition good. No pain on hyperextension of right thigh. Vomiting ceased. Temperature and pulse slightly elevated.

October 19th. Dr. Noyes in counsel. Symptoms and physical signs have not varied a great deal during last two weeks. Mass can still be detected in right iliac region.

October 22d. Same symptoms and signs with sweats. Dr. Noyes again in counsel. Operation agreed upon.

October 23d. I operated, being assisted by Dr. Noyes and Dr. McCusker. An incision three inches long was made, the centre of which was over the most prominent point of the mass in the right iliac region, parallel with the outer border of the rectus muscle. When the transversalis fascia was reached an aspirator needle was introduced twice, without entering the abscess cavity; a third time by causing the needle to enter obliquely and just to the left of the median line pus was found. An incision was made with the needle for a guide and five ounces (estimated) of fetid pus evacuated. Two silk sutures closed the angles of the wound. Coils of intestine could be felt in the cavity but not the appendix. The wound was irrigated with 1 to 2,000 sublimate solution and a double drainage-tube inserted and an antiseptic dressing applied.

December 1st. Patient made an uneventful recovery. Wound entirely healed, August, 1893.

CASE III. W. R. P., male, aged thirty-five, married.

I saw this case in consultation with Drs. P. H. Keefe and Wheeler, of Worcester, and McCusker, of Providence, on December 7, 1892. This patient gave a history of having had an attack of appendicitis one

year previously, by which he was confined to the room ten days. He has had slight pain in the right iliac region occasionally since then.

November 30th. During the night he was taken with slight general abdominal pain and vomiting. He had been working during the day and went to bed feeling as well as usual.

December 1st. Temperature 102°, pulse 120. General abdominal pain.

December 2d. Resting comfortably. Temperature 100°, pulse 110.

December 5th. Pain, dulness and rigidity of muscle in right iliac region. Pain most intense over McBurney's point. Temperature 99.4°, pulse 100.

December 6th. Conditions same as previous days. Bowels regular every day.

December 7th. Pain over McBurney's point, sense of resistance and dulness on percussion over an area four inches in diameter, just to the left of the right anterior superior spine of the ileum. No pain on moving right thigh. No chills or sweats and no fluctuation could be detected. Temperature 99°, pulse 84. Operation recommended. Assisted by Drs. Keefe, Wheeler and McCusker, I made an incision three inches long over the centre of the area of dulness and parallel with the median line. The skin, fat, external oblique, internal oblique and transversalis muscles, with the transversalis fascia were divided. An aspirator needle was then introduced and pus withdrawn. The peritoneum was now incised and three ounces of fetid pus evacuated. Appendix not found. The cavity was irrigated with 1 to 2,000 corrosive sublimate solution, a rubber drainage-tube introduced and an antiseptic dressing applied.

January 12, 1893. The wound was entirely healed.

August 26th. The patient works every day and has had no hernia or trouble since January last.

CASE IV. J. H. S., male, aged nineteen.

I saw this young man December 19, 1892, at the request of Dr. O'Keefe, his attending physician. The patient was in good health until ten days ago, when he was taken with pain in the "pit of the stomach" while at work. The pain continued and two days later was localized in the right iliac region. The third day a mass could be detected in the same region. The treatment consisted of warm poultices, anodynes and laxatives. On examination, pain was present on pressure over McBurney's point, an area of dulness about three inches in diameter with the above point as a centre and a feeling of resistance over the same area. Fluctuation could not be detected. Temperature and pulse slightly elevated. Operation advised.

December 20th. Patient etherized by Dr. O'Neil. Assisted by Dr. O'Keefe, I operated by making an incision three inches long, parallel with the outer border of the rectus muscle, and over the most prominent point of the mass. The skin, abdominal muscles and peritoneum were divided and five ounces of pus (estimated) removed from a cavity which presented. The intestines forming the inner wall of the abscess cavity could readily be felt, but a careful search failed to reveal the appendix. The cavity was irrigated with a 1 to 2,000 corrosive-sublimate solution. A rubber drainage-tube introduced, two silk sutures to close the angles of the wound and an iodoform and corrosive-sublimate gauze dressing applied. The wound was irrigated daily for a time and dressed as before mentioned. The patient made an uninterrupted recovery.

September 6, 1893. Patient has had no recurrence of the disease.

CASE V. A. F., female, age eighteen, domestic.

March 8, 1893. Patient was seized with severe pain, localized in the right iliac region. In a few hours she vomited a greenish fluid. A few hours afterwards she had a chill. She was confined to her bed until March 11th. She then rode in the steam and horse cars about six miles to her home, where she again went to bed suffering severe pain in the right iliac region.

March 14th. She was admitted to St. Joseph's Hospital. Examination shows greatest point of pain over McBurney's point; circumscribed area of dullness two inches in diameter. Sense of resistance on palpation over same area. Temperature 100.8°, pulse 112.

March 15th. Operation. Present, Drs. Collins, Noyes, Mitchell, Chesboro and O'Neil. Bichloride-of-mercury poultice over abdomen during the night. Field of operation rendered aseptic. Patient etherized. An incision about three inches long was made over tumor, parallel with the median line, down to the peritoneum. Fluctuation could be detected at the bottom of the wound, and the finger was passed through into an abscess cavity. About two ounces of fetid pus was removed, and the abscess cavity irrigated with boiled water. Appendix was not found. A counter-opening was made in the loin, and a rubber drainage-tube passed through the wounds. A glass drainage-tube was also passed into the primary wound. Irrigation again with boiled water, and two sutures of silkworm-gut at angles of primary incision. Iodoform and sterilized gauze, cotton and a bandage applied. Patient rallied well from operation. A warm-milk diet.

March 16th. Patient restless during night, and slight pain during the day.

March 17th. Dressing removed. Wound irrigated with corrosive-sublimate solution (1 to 2,000). Antiseptic dressing applied. Temperature, A. M., 99.9°; P. M., 99.6°. Pulse, A. M., 88; P. M., 96.

March 19th. Dressed. No pain.

March 22d. Dressed. Rubber drainage-tube removed. Glass tube allowed to remain. Temperature and pulse normal.

March 25th. Dressed. Slight amount of fluid feces escaped through wound.

March 31st. Dressed. Drainage-tube removed. Counter-opening entirely healed.

April 8d. Dressed. Enemas for constipation.

April 18th. Wound entirely healed.

May 4th. Patient allowed to sit up.

May 10th. Patient discharged cured.

CASE VI. H. F. R., male, East Providence, R. I. Age fifty, gardener.

This man I first saw at noon, June 27, 1893, in consultation with Dr. Mahoney. He had been at work the previous day, but had to leave his work in the afternoon on account of pain in the abdomen, most severe in the right iliac region. He had more or less abdominal pain for the last week. Temperature 100°, pulse 96. Sweats. Pain on pressure over McBurney's point. Dullness on percussion over an area three inches in diameter in right iliac region. Circumscribed sense of resistance. Could not feel a distinct tumor or fluctuation. Operation advised.

At 5 P. M., Dr. Mitchell concurred in the diagnosis, and advised operation. Assisted by Drs. Mahoney

and Mitchell, I made a four-inch incision, parallel with the median line, over the area of resistance and through the abdominal wall. When the peritoneum was reached, by the aid of an aspirator, some pus was withdrawn, and with the needle as a guide, the abscess cavity was opened. The cavity was only about one inch in diameter, and contained about two drachms of pus. The appendix was not found. Intestine formed the inner wall of the abscess. A rubber drainage-tube was introduced to the bottom of the wound, and two silkworm-gut sutures to partially close the incision. Irrigation with corrosive-sublimate solution (1 to 2,000) and an antiseptic dressing. Recovery uneventful.

August 28, 1893. Scar firm. No evidence of hernia. Patient walks about, and is in good condition.

(To be continued.)

Clinical Department.

A CASE OF CONCEALED ACCIDENTAL HÆMORRHAGE DURING THE FIRST STAGE OF LABOR, WITH RECOVERY OF MOTHER UNDER CONSERVATIVE TREATMENT.

BY EDWARD REYNOLDS, M.D.

On the 31st of last December I was asked by Dr. F. C. Murphy to see with him a primipara of thirty-eight, who had been subject to asthma and in poor health for some time, but had been in unusually good condition throughout her pregnancy. Labor began in the evening of December 29th; a few hours later Dr. Murphy was called, and found the cervix extremely long and rigid, the external os patulous, and the internal os about the size of a ten-cent piece; a little later in the evening the pulse rose suddenly to 160, and the patient felt faint, but as she gradually rallied somewhat, no treatment was adopted. During the night of the 29th and the day and night of the 30th moderate labor continued, and the pulse decreased gradually in rapidity. During the day-time of December 30th the patient became jaundiced, and began to look highly cachectic.

When I saw her at 10 A. M., December 31st, the pulse was 110, the skin was extremely sallow, the conjunctivæ slightly yellow. The patient was feeble and apathetic; the cachexia was marked, and her appearance resembled that of advanced malignant disease. The appearance of the abdomen was very peculiar. The uterus was rather small and extremely prominent, the epigastrium sinking rapidly away behind the fundus. On palpation, the fundus was tonically firm and rounded, suggesting the presence of unbroken membranes. The head presented. There was a tonic contraction of considerable intensity, accompanied by feeble exacerbations. On vaginal examination, the external os was soft and thin, about half dilated, and hanging away from the head; while the internal os, slightly larger, was hard and rigid, and pressed firmly against the head. The fœtus was moderately macerated, and a portion of its scalp, filled with fluid, occupied the cervical canal. Under ether, Dr. Murphy easily extracted a six-pound child by forceps. With the first attempt at expression the placenta was forcibly expelled, and was followed by about a quart of dark, old-looking clot.

The patient rallied well from the ether, and subsequently made a rapid convalescence.

Though forceps are not strictly applicable to much macerated heads, they were used here, on the ground of my belief that the extraction would be easy, and that the head was sufficiently firm to offer a secure grasp, a belief which was justified by the result. I think it probable that the blood was extravasated behind the placenta on the evening of the 29th, at the time of the sudden rise of pulse. The foetal heart had not been listened for at that time, and it is impossible, of course, to state that the death of the child was due to the hæmorrhage and the consequent detachment of the placenta; but as the mother had felt active movements shortly before that time, and as some previous experiences lead me to believe that maceration may become well advanced in a period of forty-eight hours in utero after the death of the child, I am inclined to believe that the hæmorrhage was the cause of the foetal death in this case. It is an interesting question whether the apparent jaundice could be hæmatopoietic and due to the hæmorrhage. The case is, at all events, well worthy of record from its extreme rarity.

INTESTINAL ANASTOMOSIS (WITH SENN'S PLATES) FOR CANCEROUS OBSTRUCTION.

BY J. W. ELLIOT, M.D.

THE patient was a feeble man, sixty years old. In August he had an attack of vomiting and diarrhoea. In September he began to lose his strength and to have attacks of dizziness. He also had a serious stoppage of the bowels, with pain on the right side, which was relieved by castor oil. He soon found that solid food gave him colic, he therefore took only liquids. In October he had more pain on the right side of the abdomen, and the movements became more difficult. Then the abdomen began to swell.

In November all his troubles became worse; he eat less, and had more pain. He then entered the Massachusetts General Hospital. There he vomited for four days, eat nothing, and was kept alive by nutritive enemata. He improved somewhat in his general condition, but had absolutely no movements of the bowels. No tumor could be felt.

Operation.—On December 15th the abdomen was opened, and the bowel was found to be completely obstructed by a cancerous mass in the cæcum. An anastomosis was then made, with Senn's plates, between the colon and the ileum. The operation did not take more than fifteen or twenty minutes; the patient, feeble as he was, had little or no shock. He made a rapid recovery. His bowels moved in twenty-four hours, and he took solid food on the fourth day.

It is now nearly three months since the operation. He has free and natural movements of the bowels, and has gained twenty-two pounds. He has no pain, and feels perfectly well. The growth has increased in size, and can be plainly felt in the abdomen. I should advise its removal if he were a stronger man.

I consider intestinal anastomosis one of the greatest advances in surgery; and it is difficult to understand why this very valuable operation has not yet been taken up in Boston, Dr. Homans's case being the only one on record. The operation is very quickly and easily done; and Dr. Senn deserves great credit for perfecting the technique. The advantages to the patient of an intestinal anastomosis over an artificial anus are enormous.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

TUBERCULOSIS AS A CAUSE OF PLEURITIC ADHESIONS.¹

SCHLEUBER gives the results obtained from 106 autopsies, but 21 of which showed no pleural adhesions. Among the remaining 85 the adhesions could be attributed in a number of cases to affections of the lungs other than tuberculosis, or to cardiac disease. Leaving these cases out of consideration, there remained 57, in 33, or 57.9 per cent, of which the adhesions, from the macroscopic examination, could be referred in all probability to a tuberculous cause. Schleuber is of the opinion that these figures would have been increased rather than diminished by the use of the microscope.

PECULIAR ODOR OF THE BREATH OF TUBERCULOUS PATIENTS.²

Rosenbach calls attention to a peculiarity of the breath of tuberculous patients, slightly resembling that of mild cases of putrid bronchitis, but differing from it in having a disagreeably sweet quality. It may become apparent in the neighborhood of the patient even in the absence of expectoration. It adheres to expectorated matter but feebly, being probably dependent on some volatile substances. It is only present in the exhaled air, and thus becomes most evident when the patient coughs or breathes with open mouth. It is a sign of unfavorable prognostic significance, even though the other manifestations in the case appear favorable. It is often present when the destructive process is not marked, and is most noticeable when the physical signs are unobtrusive. It is almost always an associated manifestation of disseminated broncho-pneumonic consolidation. It is wanting in cases of extensive infiltration, when cavities have formed and also when the sputum is copious. In a large number of cases in which this symptom was observed hæmoptysis occurred. Night-sweats, anorexia and febrile exacerbations were also frequently noted. The phenomenon is of diagnostic significance as it early indicates the occurrence of a morbid process in the lungs, and should therefore be sought for in all doubtful cases. To insure against a possible source of error the mouth and teeth of the patient should be first thoroughly cleansed.

THE DISINFECTION OF TUBERCULOUSLY-INFECTED HOUSES.³

Delepine and Ransome give the result of their efforts to disinfect rooms in which a phthisical patient has lived by chlorine, or more correctly suchlorine. Pieces of paper were carefully sterilized in glass capsules, and then infected with tuberculous material, either sputum or pure cultivations of the bacillus (human in most cases, avian in a few). The capsules were sealed, the sputum or cultivation being allowed to dry on the paper, and were not opened until just before the acid was poured on the chlorate of potash, and were again sealed when the room was reopened. Rabbits and guinea-pigs were then inoculated with small pieces of infected paper or superficial scrapings

¹ Arch. f. path. Anat., etc., Bd. 131, Heft 1.

² Wien. Med. Presse, 1893, No. 28; American Journal Medical Sciences, October, 1893.

³ British Medical Journal, November 4, 1893.

mixed with sterilized bouillon. In nine experiments made with three different kinds of sputum the results were unsatisfactory; in some cases complete disinfection seems to have been obtained, but the control experiments showed that some sputa were not as virulent as others. In six experiments made with pure cultures of the bacilli of human tuberculosis distinct evidences of the disease were observed within three or four weeks after inoculation. They therefore conclude that this method of disinfection, as well as that with sulphurous acid, which they have also investigated, is ineffectual. From some laboratory experiments with an old method of disinfection (not given) they hope before long to give practical means of effectually disinfecting places that have been contaminated with tuberculous products.

CONSUMPTION HOSPITALS AND TUBERCULOUS DUST.

The *British Medical Journal* (September 16, 1893) says that "the steady drift of opinion, especially among the younger of our physicians, in favor of the infectious nature of tuberculous phthisis has led us to make some inquiry at the hospitals especially devoted to the treatment of consumption as to the nature and extent of the precautions which they have thought well to take, or the warnings which they have thought it desirable to give to their patients, with the object of preventing or limiting the spread of the disease." The methods adopted by the various hospitals are severally reported, but are too long for reproduction here. They unite in stating that the chief way in which the infectious material enters is with the inspired air in the form of dust, and are strenuous in their efforts to keep the sputum wet until it is removed, some antiseptic, usually carbolic acid or occasionally a solution of caustic soda if the expectoration is very adhesive, being used in the cups. The stools are also quite generally disinfected. They are much less united in their treatment of the handkerchiefs, which by some authorities are prohibited altogether, while by others they are allowed, even though the danger caused by them is admitted. No precautions are generally taken regarding the soiled clothes; though in one case is taken that the dirty linen used by the officers, nurses, etc., is not sent to the same laundry as that of the patients, "an arrangement probably more satisfactory to the officers than to the general public." They are equally illogical in their dealings with the general dust of the institutions, which is removed by dry cloths and brooms, reliance being chiefly placed in an abundance of fresh air for rendering it innocuous. The journal mentions with approval the position taken by some of the provincial authorities, the Lancashire people, for example, not being content with the expression of a pious opinion on the subject, but print and distribute warnings, and in some places receive an informal notification of cases of tuberculosis, and even go to the expense of free disinfection of houses where consumptives dwell.

TUBERCULOSIS OF THE BRONCHIAL GLANDS AND ITS RELATION TO THE TUBERCULOSIS OF CHILDHOOD.⁴

Neumann sums up an interesting paper on this subject as follows:

Tuberculous infection in children is usually at first localized in the bronchial lymph glands. It is very common in the first years of life, and results from inhalation of the infectious material. This method of

infection may be prevented by proper hygienic regulations, which, though at times difficult to obtain in private practice, should be demanded in all public institutions. From the bronchial glands infection either rapidly spreads through well-known anatomical paths or it remains latent for an indefinite period, until its activity is finally excited by some condition (catarrh or inflammation of the respiratory tract) in which the glands are secondarily affected. At times, however, it may remain permanently latent or cure result from calcification. Diagnosis is only possible in advanced cases, and only then when the condition of the gland is not masked by affections of other organs. So long as they are simply tuberculous, but not enlarged or adherent to neighboring organs, they give rise to no signs or symptoms, while, on the other hand, the process which started from them may have produced such marked pathological changes in their neighborhood as to conceal the original trouble. Even when an autopsy has shown that diagnosis was possible, it has not always been made; nevertheless, cases comparatively frequently appear where a consideration of the possibility of an earlier infection (heredity, measles, etc.), combined with the rational and physical signs, makes their presence more or less probable. Especial weight is to be laid on the presence of a peculiar cough resembling pertussis in its paroxysmal character, and the presence of a very loud, indeterminate, though usually bronchial, respiratory murmur in the neighborhood of the upper thoracic vertebræ. The difficulty in diagnosis is well illustrated by a case reported by Stoll,⁵ occurring in a girl ten years old, in which the symptoms were so obscure that it was impossible to determine the seat of the disease until the autopsy, which showed a perforation of the trachea on a level with its bifurcation, through which a gland about the size of a walnut emptied itself. Beneath this large one were several others with softened centres. The trachea itself was obstructed by a plug of pus, situated above the perforation, which filled up the whole lumen and was probably the immediate cause of death.

CURE OF EMPYEMA.⁶

Aufrecht describes his progress through the various methods which have been devised for the treatment of empyema. After an experience with four cases he discarded aspiration as a means of cure, and practised incision and drainage, but has now reached the conclusion that resection of a rib is by far the most satisfactory proceeding, as it obviates the danger of hæmorrhage, allows free exit for masses of fibrin and prevents the too rapid closure of the opening, which by the simpler method could sometimes be kept open only by a silver tube. He selects a rib near the angle of the scapula, unless contraindicated by pleural adhesions or by the very weak condition of the patient. In the latter case he chooses the axillary line, as there is much less chance of death during the operation if the dorsal position be maintained. Beside the preliminary puncture to ascertain the presence of pus, he is accustomed to make a second after resection through the free pleura. He recommends at first daily irrigation. Cure results from the fact that with each inspiration the lung collapsed by the operation must dilate if the size of the opening in the chest-wall is smaller than that of the primary bronchus leading to the part. In addition,

⁴ Dent. Med. Week., 1893, Nos. 9-17.

⁵ Centralblatt f. klin. Med., 1894, No. 3.

⁶ Dent. Arch. f. klin. Med., Bd. III, Heft 1 and 2.

however, it is necessary that the pleura itself should be in a condition to allow adhesions to form between its two surfaces. The slow subsidence of the pleural inflammation in some cases to the point where this is possible, explains their occasional protracted convalescence.

LEUCOCYTOSIS IN GROUPOUS PNEUMONIA.⁷

Laehr reports sixteen very carefully studied cases of pneumonia in reference to the relationship of the leucocytosis present in them to the temperature, amount of infiltration and the severity of the infection, as well as in its significance in diagnosis, prognosis and treatment. The cases showed a marked correspondence between the height of the fever and that of the leucocytosis, in that they rose and fell together, but the correspondence did not go so far as to show that the greatest number of leucocytes was always associated with the highest temperatures. A certain parallelism was also observed between the former and the amount of infiltration, but that other factors were present is shown by two cases, both powerfully built men, in one of whom the whole right lung was affected and yet the leucocytes numbered only 10,000 to 14,000, while in the other, though but one lower lobe was attacked, 51,000 were counted. This dissimilarity Laehr accounts for by the individual peculiarity of the patient and the force of the infection. Regarding diagnosis, a blood-count may prove of great value in distinguishing early cases of pneumonia from typhoid, meningitis, influenza and probably miliary tuberculosis, in which little or no increase of the white elements has been found. In prognosis it may with probable safety be said that if the number of leucocytes does not diminish with the fall of temperature that the process has not come to an end, or if it sinks with the temperature to normal, but rises by several thousand later, a recrudescence of fever, or the appearance of some complication, may be confidently looked for. In the most severe cases his experience is in accord with that of Haller, Rieder and von Jaksch, in that either no leucocytosis was observed or else a very slight increase.

Whether these observations will prove of value in indicating a method of treatment, such as the administration of drugs like jaborandi, antipyrin, antifebrin or nuclein, which are said to increase the number of white corpuscles, as recommended by von Jaksch, is yet to be proved, as it is not yet known how far an inflammatory leucocytosis is protective against disease germs, much less than an artificially produced one. The usefulness of cold baths in pneumonia receives support in this respect from Winternitz, who claims that they too increase their number.

INCISION AND DRAINAGE IN PYOPERICARDIUM.⁸

Sievers gives the histories of the eleven cases of purulent pericarditis treated by incision and drainage, which have been previously reported, and adds one of his own occurring in a woman twenty-two years old, who died thirteen days after operation.

He draws the following conclusions:

- (1) That the operation is a proper one, that it produces no disturbance of the heart's action and offers the only chance of cure.
- (2) That in many cases it may lead to full recovery (five cases out of twelve), and that in complicated

pyæmic conditions it may at least better the condition of the patient or prolong his life.

- (3) That the incision is best made in the fourth or fifth interspace, a few centimetres to left of sternum, and drainage introduced, but irrigation should be omitted.

CYSTIC DEGENERATION OF THE MUSCULAR FIBRES OF THE HEART.⁹

Meigs describes a form of myocardial degeneration in which "the destructive process, in its most extreme form of development, removes the whole of the muscular substance from the centre of the fibre, no part of which, when examined by the microscope, will present the usual appearance of muscular tissue except the thin outer walls, and even these may show only in places the cross-markings characteristic of heart muscle." The muscle nuclei often lie loosely in the cavities without attachment to the remaining tissue. The hollowing-out, when most extreme, is apt to be near the ends of the fibres toward their point of origin or insertion, but will be unmistakable in all parts of the heart. "The fact that the muscular fibres of the heart are penetrated by capillaries and are not, therefore, truly solid bodies, together with the appearance of these spaces, leads to the almost inevitable conclusion that the process is one of cystic degeneration," a capillary becoming blocked in two places, the portion between them dilating and thus forming a cyst. The assumption that they are minute aneurisms is negated by the nature of the material lying within the cavities, which is amorphous and granular or consisting of yellowish pigment in irregularly-shaped flakes. It is impossible at present to predict from clinical manifestations which cases will present this curious change, as it was absent in cases of brain syphilis, sarcoma, general miliary tuberculosis, Bright's disease, pulmonary phthisis, typhoid fever, pneumonia, dysentery, epithelioma of the bowel and aneurism, and present in what was clinically recognized as organic heart disease, Bright's disease, typhoid fever, ulcerative endocarditis and in young infants that died of wasting.

BRADYCARDIA DURING CONVALESCENCE.¹⁰

In speaking of the slow pulse (60 or less) which is sometimes met during convalescence from acute diseases Dehio says that we have little positive knowledge of the cause of its appearance or the anatomical changes which accompany it. With the establishment of convalescence the pulse falls with the temperature, but the fall continues below the normal rate until its beats number only sixty a minute or even decidedly less. This condition in mild cases lasts but a few days to a week, and, with this exception, the patient presents no noteworthy symptoms. The heart seems normal though the apex beat is weak, the pulse is easily compressed and often dicrotic, at times, also, slightly irregular. In the severe forms, however, the patient shows signs of great prostration, the lateral area of the heart's dulness is increased, its action is irregular and intermittent, and a systolic murmur is heard over the left ventricle. In order to determine whether this resulted from some change in the heart itself or was of central origin, Dehio injected hypodermically one-sixtieth to one-thirtieth of a grain of atropine, which has the power of paralyzing the cardiac

⁷ *Bal. klin. Woch.*, 1898, Nos. 36 and 37.

⁸ *Zeitschr. klin. Med.*, 1898, Bd. xxiii, p. 26.

⁹ *Transactions College of Physicians, Philadelphia*, 3 s., vol. xiv.

¹⁰ *Deut. Arch. f. klin. Med.*, Bd. lli, Heft 1 and 2.

terminations of the vagus nerve. In a mild case he found that the number of beats was increased to the same degree as under normal circumstances, while in the more severe forms this increase was much less marked. He, therefore, concludes that the cause is to be found in the heart itself and not in some change in the nervous mechanism, such as an increased irritability of the vagus or an atonic condition of the medullary centre of the accelerator sympathetic fibres, and is, therefore, an evidence of cardiac weakness, and of the same import as other symptoms (intercurrent attacks of rapid pulse, irregularity, palpitation) of this condition, many of which were present in his cases. The occurrence of this symptom is comparatively rare as he only met with eight cases in his hospital clinic during the past semester. He suggests the probability of its being due to the toxic action of some specific material produced in the organism during the course of an infectious disease which causes no anatomical change in the heart, but considers it probable that an individual predisposition also exists, otherwise it would be difficult to explain why it was not present in all convalescent patients and why it was not more common after severe infectious cases than after mild ones.

THE SCHOTT METHOD OF TREATING CHRONIC HEART DISEASE.¹¹

Babcock, who has had a personal experience as a patient, gives a brief account of the so-called Schott Method. In theory, it is the same as that of Oertel, the production of cardiac hypertrophy through increase of its physiological function, but can be much more generally applied, as it is contraindicated only in aneurism of the heart or large vessels, or in advanced arterio-sclerosis. Nevertheless, as the powerful stimulation produced by the baths is capable of doing great harm, care and experience are necessary in its employment.

The method consists in the administration of warm baths, either simple saline, or containing a large percentage of carbonic-acid gas, the amount of the saline constituents and the carbonic acid being gradually increased as the patient becomes accustomed to them. The temperature varies between 92° and 86° F., and the duration from five to twenty-five minutes, being short at first, and gradually lengthened. The baths are occasionally omitted for a day. The patient is under general hygienic and dietetic restraints, and, in connection with the baths, gymnastic exercises, consisting of resisted movements of the extremities and body, are given by, preferably, a trained assistant. A single movement should not be immediately repeated, and each one should be followed by a short period of repose, and should not be made in such a way as to cause acceleration of the pulse or respirations.

As a result of the baths there is a slowing of the pulse and an increase in volume and strength, while its irregularity lessens, or even disappears. The increased vigor of the cardiac contraction permits a positive diminution in the size of a dilated heart, which can be demonstrated by accurate percussion practised before and after a bath. Among other effects is a sense of well-being, particularly of ease and lightness in the chest, relief of dyspnoea and increased diuresis. The effect of the gymnastics is similar to that of the baths on the pulse and heart, but the favorable effects are less lasting.

¹¹ Journal American Medical Association, November 11, 1893.

Functional as well as organic disorders, are strikingly benefited, Schott claiming highly satisfactory results in cases of exophthalmic goitre. Although Schott's results are obtained by the natural waters of Bad Nauheim, there seems no reason why artificially-prepared waters should not prove efficacious.

FUNCTIONAL INSUFFICIENCY OF THE VALVES OF THE LEFT HEART.¹²

Dombrowski, in commenting on the usual explanation given for inorganic insufficiency of the mitral valve, that it results from distention of the orifice, the flaps being unable to completely close it, says that such dilatation is by no means invariably found, and, besides, the orifice is surrounded by a tendinous ring whose resistance is not easy to overcome, as he has proved by several experiments. He removed the heart from the cadaver, ligatured the aorta, and then, through an opening made at the apex, forced in water under strong pressure, in spite of which the valve allowed no leakage. Only when the cardiac dilatation became very considerable did the valve prove insufficient, and even then the orifice preserved its normal dimensions. Moreover, Wulf has shown that the surface of the flaps greatly exceeds the size of the orifice, while Kirschner and Garcin claim that the aortic half alone suffices to cover it, even when considerably dilated. Clinical experience is also opposed to the view usually held; for the transitory character of the insufficiency—as shown by the behavior of the murmur, which disappears, and then, perhaps, reappears after a certain time—does not accord with a distention of the orifice. The cause of the insufficiency must, therefore, be sought in the muscular dilatation producing a separation of the insertions of the papillary muscles, which in systole cannot approach each other near enough to allow the valves to close, the contraction of the papillary muscles only increasing the difficulty. He would, therefore, prefer the term "functional" to that of "relative insufficiency."

The aortic valve is no exception to the general rule that all the valves of the heart may become insufficient, but it seems to be a rare event, as he has been able to find but a few cases reported in literature. He adds two others proved by autopsy from his own experience.

In contrast to the functional insufficiency of the mitral valves, that of the aortic is always relative, and depends on a dilatation of the aorta, resulting from increased blood-pressure followed by atheromatous changes in the artery. It is a terminal symptom, the precursor of death, and its recognition clinically is, consequently, of considerable importance. It is not always possible to distinguish it from a true aortic lesion but in the differential diagnosis stress should be laid on the age of the patient (it never occurs under fifty), the signs of general atheromatous changes, its slow and insidious development with probably a long history of symptoms of increased blood-pressure, oppression, palpitation and vertigo, to which should be added the signs characteristic of dilatation of the aorta, pulsation in the neck, dullness under the manubrium, and the metallic quality of the second cardiac sound.

A STRONG MAN, on exhibition in London, lifts two horses with their riders at the same time, the total weight being about four thousand pounds.

¹² Rev. de Méd., September 10, 1893.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

THIRTY THIRD ANNUAL MEETING, January 13, 1894, the President, DR. CHARLES M. GREEN, in the chair.

DR. W. L. BURRAGE read by invitation a paper on
THREE YEARS' EXPERIENCE WITH ELECTRICAL
TREATMENT OF FIBROID TUMORS OF THE UTERUS,
WITH A REPORT OF FORTY-FOUR CASES,

of which the following is an abstract:

In the three years from October 18, 1890, to October 18, 1893, he had seen, in hospital and private practice, 98 cases of fibroids; 44 of these had been treated with electricity after the method of Apostoli, and had received at least six treatments each. Apostoli had been followed rigidly, and the cases had been kept under personal observation for as long a time as possible, in order to arrive at accurate conclusions as to permanent results. The records of the 44 cases were presented to the Society in tabular form. All cases of doubtful diagnosis had been excluded from the tables, and a majority of the whole number had been subjected to an ether examination. For details of treatment the members were referred to a previous paper on technique by Dr. Burrage, published in the *Boston Medical and Surgical Journal* for November 26, 1891. Most careful measurements of abdominal girth and uterine depth were taken with the same steel tape in every case.

It is impossible to take absolute measurements of the size of fibroids, owing to the varying condition of emptiness or fulness of the intestines, bladder and rectum, the changing thickness of the fat of the parietal walls and omentum, and the changing shape of the tumor. Fibroids vary in size even from day to day, owing to temporary engorgement or depletion. It is a well-known fact that they are smaller just after the catamenia and larger before and during. The relative size must be determined by tactile sense and by repeated examinations (an anæsthetic is an advantage) under as nearly similar conditions as possible.

Tonics and other forms of treatment were studiously avoided, so that the results might be fairly attributed to electricity.

Thirty-five of the cases are analyzed with reference to anatomical results. Each had at least six treatments with galvanism, either intra-uterine or by puncture, and with intensities rising fifty milliamperes, and, in addition, had been under observation for at least four months from the beginning of electrical treatment, a majority from one and one-half to two years. The entire 44 cases are later analyzed as to symptomatic results.

First, as to anatomical results, the effect of electricity on the size of fibroids:

Of 35 cases, 9 (25.7 per cent.) showed a decrease in size at the end of periods varying from one to eight months from the beginning of treatment; but in six of these nine, at the end of periods of time varying from one to two and one-half years, the tumor was as large as at the beginning or larger. The other three were lost sight of, one in four and the other two in eight months. The tables furnished no positive evidence that any of the tumors were permanently lessened

in size as a result of electrical treatment. Seven cases out of 35 (20 per cent.) were somewhat larger at the end of one and one-half to two and one-half years. Deducting from 35 these 7 cases, and the 3 in which the tumor was smaller when the patient was lost sight of, and we have 25 as the number of cases in which the tumor remained of the same size, or 71 per cent. The writer had failed to observe rapid disappearance of fibroids, but had noticed marked decrease in the size of separate nodules following puncture. Electricity clears up pelvic inflammation; a fibroid previously fixed becomes movable; a mass made up of exudate and ovary and tube disappears under treatment. The fat in the abdominal wall is increased in thickness. Measurements of uterine depth are not materially affected. Intra-uterine applications of galvanism have a temporary curative effect on the endometritis of fibroids, but not a permanent effect, the endometritis returning after several months, just as it does in most cases after curetting.

A case illustrative of the above was that of a patient treated with intra-uterine galvanism for three months, eleven treatments, 40°-70°. On doing a hysterectomy, a year later, the uterine cavity was found lined with soft, velvety tissue easily scraped off a glistening white base.

Cervical stenosis following high intensities occurred in a certain proportion of the cases. It is to be guarded against by beginning treatment with the tip of the electrode, as near the fundus uteri as possible. Stenosis prevents subsequent treatment with larger electrodes. It has not caused dysmenorrhœa.

Second, the symptomatic results. The thirty-five cases are classified under four heads:

I. Those that were relieved of pain permanently.

II. Those that were relieved of flowing permanently.

III. Those in whom there was permanent improvement of general strength and ability to work.

IV. Those that experienced no permanent benefit.

Of I, there were 11 cases out of 19, in which pain was a prominent symptom, or 60 per cent.; of II, there were 7 cases out of 23 cases, in which flowing was a prominent symptom, or 30 per cent.; of III, there were 21 cases out of 25, where relief was possible, or 84 per cent.; of IV, there were 8 cases, or 23 per cent. Adding together I, II and III, and subtracting 12 for the cases inserted more than once, and the result is 27, the number of cases that received permanent symptomatic benefit, or 77 per cent. An analysis of the entire 44 cases with reference to temporary symptomatic relief gives 84 per cent. as benefited by electrical treatment. The figures make a very satisfactory showing when it is taken into account that the cases were treated for the most part in an outpatient clinic; that many of them, preferably treated at their houses, were obliged to travel long distances and wait their turn for treatment, and then go home often after a tedious ride in the cars and in inclement weather.

As to particular symptoms, electricity had no effect on a watery leucorrhœa in two cases. In two patients, it cured the uterine cough spoken of by French writers.

Summing up, we may say, that, on the whole, the anatomical results were unsatisfactory. Assuming that fibroids, if untreated, have a tendency to increase in size, we are justified in the conclusion that galvanism has an inhibitory effect on a majority of these tumors; 71 per cent. of the tabulated cases remained

stationary. Until we know more of the conditions that favor increase or diminution in their size, the laws of their pathological growth, we cannot say more. The symptomatic results, on the other hand, present a highly satisfactory showing, 77 per cent. being permanently cured. The low percentage of cures of hæmorrhage is to be attributed to the distorted shape of many of the tumors, making thorough intra-uterine treatment impossible, and to the fact that endometritis, the source of the hæmorrhage, will return if the cause is still present, whether the treatment has been by caustics, carbolic acid, etc., by curettement, or by positive intra-uterine galvanism. Intra-uterine galvanism for hæmorrhage has the advantage over curettement and the application of caustics, that it does not necessitate the administration of an anæsthetic with its attendant discomforts and risks, and is followed by no reaction. It is preferable to ergot and hydrastis, as it has a tonic instead of a depressing influence on the digestion, and its effect is more durable. Galvanism often succeeds where ergot and hydrastis have failed.

As regards the alleged danger of electrical treatment, it must be concluded that, if properly applied, it is without danger. It is contraindicated in pregnancy and acute inflammation, and that is all. An illustrative case of acute salpingitis confirmed by oosiotomy is cited. That galvanism causes abscesses and adhesions the writer believes to be false. Cases of pus-tubes treated for months with galvanism, with no change in symptoms and verified by subsequent abdominal section, are referred to; also cases treated with galvanism, intra-uterine, vaginal and by abdominal puncture, in whom, on opening the abdomen, no adhesions were found. Sensitiveness to galvanism has not been an indication of the presence of pus, although considered so by Apostoli.

As to puncture, the writer advocates vaginal puncture, but thinks this in many instances contraindicated, because of the likelihood of wounding the ureters, bladder and rectum. Intra-uterine treatment is to be preferred. All treatment should be begun gradually and with vaginal application, because intra-uterine and puncture treatments are more or less painful, and our women are not as phlegmatic and insensitive as the women who attend the foreign clinics. Faradism from the coil of fine wire is of great service in relieving the pain caused by high intensities of galvanism.

The results obtained in the cases included in the third classification — those permanently improved in general health and rendered better able to work — are extremely satisfactory, and alone justify the time and labor necessary for the proper application of electricity. The results are out of all proportion to those obtained from general electrization, and besides, it is more rational to apply the electricity as near the seat of disease as possible. The writer believes that fibroid tumors are not the harmless tumors they have been thought to be; although they seldom kill quickly, they wear out slowly, and many a woman leads a life of misery and suffering because the profession has believed and advised that nothing but hysterectomy could relieve.

As we learn more and more about these tumors, and appreciate better the symptoms to which they give rise, their laws of growth, the danger to the economy from long-continued pressure, and, as the technique of hysterectomy is improved, the speed in operating increased, and the mortality lowered, it is the writer's opinion

that total removal will be practised oftener and oftener and earlier and earlier in the life-history of fibroids. When such a radical measure is inexpedient, and it always will be in a certain proportion of cases, our duty is plain, we must relieve suffering. Electricity, on account of its safety, on account of its proved ability to relieve hæmorrhage and pain, and on account of its surety to improve the general health and strength, is the best means at our command with which to treat this distressing condition.

Conclusions. — (1) Hysterectomy is contraindicated in a majority of cases of fibroids, because of the high rate of mortality, and because it unsexes the patient, an important consideration in younger women.

(2) Electricity is the best therapeutic means at our disposal to combat pain, hæmorrhage, and impaired health and strength.

(3) Intra-uterine galvanism is most useful.

(4) We must not look for a permanent reduction in the size of the tumor.

(5) Galvanism, vaginal, intra-uterine, or by puncture, does not cause abscesses or adhesions.

(6) Galvanism is of no use as a means of diagnosing the presence of pus.

(7) Treatment by electricity, after the Apostoli method, is absolutely safe.

(8) Every case of fibroid tumor of the uterus should be under competent medical observation, because of the danger of malignant degeneration, kidney disease from pressure, complications during pregnancy, and the liability of the occurrence of pain and hæmorrhage and functional nervous disorders, especially during a delayed and protracted menopause.

DR. G. H. WASHBURN said he had watched a number of the cases reported by Dr. Burrage, and had himself treated a number of other cases. He recalled one case where a rapidly growing fibroid diminished rapidly after the second treatment by electricity. The first application had no effect except to make the patient more comfortable. After the second application there was a diminution in size, of one-third or one-half. This was the only case where he saw such marked diminution. In another case there was some diminution in size after six months' treatment. The results in other respects were most satisfactory. He would agree most thoroughly with Dr. Burrage's conclusions, that as our ability to operate on these cases increases so would the number of operations; and the careful statistics of Dr. Burrage shows us the scope of electricity, and that it is of great value within certain limits.

DR. M. H. RICHARDSON said that he had had no personal experience in the electrical treatment of fibroid tumors, for this was a branch of medicine in which he preferred to send his cases to the medical electrician. Patients had frequently come to him in whom the symptoms were so severe that the tumor could be removed only with the greatest danger. In such cases the patient's strength is so reduced by hæmorrhage and long suffering that the formidable manipulations of a hysterectomy are almost surely fatal. To leave the tumor untouched, however, means gradually increasing weakness, suffering and death. When the brilliant results of the electrical treatment of fibroids were first published, a safe middle course seemed at hand, by which the strength of the patient might be increased enough to enable her to undergo with comparative safety the radical operation, — even if we made allowances for the usual exaggerations of the merits of new

method of treatment. While the brilliant results from this method of treatment which were at first published have not been fully realized, yet the use of electricity in many advanced cases has so diminished both the pain and the hæmorrhage that the patients have been enabled to undergo successfully total extirpation. From the standpoint of the operating surgeon a hysterectomy for fibroids carries a considerable mortality. Deaths are due, first, to the weakened condition of the patient; and, secondly, to peritonitis from unavoidable contamination during the operation. With the patient in good condition, the results of the operation at the present time are very satisfactory indeed. Dr. Richardson's mortality is constantly decreasing, and yet he does not expect ever to be able to avoid fatal results in this class of cases.

Puncture of the tumor for the application of electricity the speaker regards as dangerous, because he has seen at times excessive hæmorrhage from small perforations of the enormous veins which sometimes ramify in the capsule of the tumor. He is now more inclined to advocate the early removal of these tumors than he was formerly, chiefly because of the vast increase in the dangers which attend advanced cases. On the other hand, he believes that one may easily go to the other extreme and become dangerously meddling in his efforts. Total extirpation of the uterus for a fibroid of small dimensions which is causing no trouble is unjustifiable except in the rarest instances. Even if the tumor is of considerable size, so long as it produces no symptoms except those of weight—so long as there is no excessive hæmorrhage, no pain or discomfort, and no evidence of pressure upon the ureters—the operation is unjustifiable, even with the present excellence of technique. Yet there is one consideration which must be borne in mind in advising against operation in these cases, and that is the possibility of malignant degeneration. This danger is always present, and is the only good reason for interference in the class of cases which is referred to. Dr. Richardson has rarely seen a malignant tumor of the uterus which has resulted from the degeneration of a fibroid. Certainly there have not been as many cases of hopeless malignancy as there have been of unnecessary death—if among unnecessary deaths are included those cases of fibroid which died after an operation that was not imperative. In his experience there have been two deaths after the removal of fibroids in which the symptoms were not distressing. In both, the operation was undertaken at the urgent solicitation of the patient for the relief of pain and disability; in both, life—endurable though not enjoyable—might have been prolonged for many years by palliative treatment.

As far as the speaker's observations have gone in his own practice and in that of his colleagues, the removal of a fibroid tumor of the uterus by hysterectomy is one of the most formidable of procedures. Even with the greatest skill and experience in operating, the mortality is considerable. He would welcome, therefore, any method by which either the operation might be rendered unnecessary, or the patient could be so improved as to enable her to undergo more safely the inherent risks of the radical operation.

Dr. E. J. FOSTER spoke of a case he had seen in consultation, where there were two fibroid tumors of the uterus, one subperitoneal and one submucoid. These were treated by electric puncture. The sub-

peritoneal tumor disappeared, the other tumor sloughed. The patient has since become pregnant.

Dr. EDWARD REYNOLDS said that his experience with electricity in other gynecological affections accords with Dr. Burrage, that it is of great value and as safe as any method of treatment. Its use tends to a surprising degree to relieve reflex nerve troubles.

Dr. J. W. ELLIOT believes in very early operation on fibroids in those cases of rapid growth, with frequent hæmorrhage, and debarring the patient from earning a living. Early operations give a very low mortality from fibroids. As the passing of a uterine sound may in careless or unskilled hands cause septiciæmia, so may and has the application of the electrode. In specialist's hands, as with Dr. Burrage, this can be done safely.

Dr. G. HAVEN would agree with Dr. Burrage that an exudate was absorbed by means of the electricity.

Dr. F. H. DAVENPORT said that the use of electricity in these cases needs, of course, special apparatus and much time; and it is a question whether this method should supersede the other methods we are in the habit of using. He had for two or three years been treating fibroids with electricity, and although he has had good results, he is not sure but that as good results might be obtained by other methods. Two series of cases treated in the two ways would be of great interest.

Dr. BURRAGE: I should like to ask Dr. Elliot if the case of peritonitis he has referred to was following puncture through the vagina or through the abdominal walls? As I said in my paper, I consider that the latter procedure involves too much danger to recommend it.

With reference to the danger of sepsis following intra-uterine treatment, I regard it as trivial. I have had no trouble with my cases, nor do I have constitutional disturbances after passing the sound. I attribute this to painstaking and constant care in cleansing my electrodes and sounds each time before introducing them, and also to the fact that it is my habit to either douche or wipe out the vagina with a strong antiseptic (corrosive, 1 to 2,000; creolin, 1 to 500; lysol, one per cent.) previous to any intra-uterine instrumentation, whether electrical or otherwise. To this fact, more than to great gentleness in passing the instrument, I attribute my immunity from septic trouble. Although the micro-organisms in the vagina are not all destroyed by the antiseptic, their number is lessened and their activity diminished, and fewer are carried into the uterine cavity. The antiseptic action of the positive pole is also a factor in guarding against sepsis. Apostoli has proved this.

Dr. Davenport has spoken of the good results he has obtained by the use of methods other than electricity. It seems to me that the profession is in need of facts and figures bearing on this matter. I, for one, wish that some one, having in view the object of reporting results, would follow up for a reasonable length of time a series of cases treated by these methods, and also cases not treated at all. The data so gained would be of the greatest value. Personally, I place reliance on electricity.

As Dr. Richardson has said, if electricity can be used in getting patients who are worn out by years of suffering in proper condition for operation—patients, who, if operated on at once, are almost sure to die—it has great value. I can assure him that electricity

has been many times so used. It is a means of lowering the mortality of hysterectomy. Many patients are so much improved after a course of electrical treatment that they do not need hysterectomy, whereas others do not receive permanent benefit. Electricity does no harm and may do great good.

In treating fibroid tumors, we have to face a complicated and difficult problem. It is seldom that we can say, the first time we see a patient, hysterectomy or nothing. We must do the best we can to relieve suffering. Because too much has been claimed for electricity is no reason why we should refuse to avail ourselves of the good that it surely can do.

DR. EDWARD REYNOLDS reported

A CASE OF CONCEALED ACCIDENTAL HÆMORRHAGE DURING FIRST STAGE OF LABOR, WITH RECOVERY OF MOTHER UNDER CONSERVATIVE TREATMENT.¹

DR. A. WORCESTER wished to ask whether the reporter considered the mother's jaundice due to the absorption of the coloring matter in the blood-clot in the uterus. He did not see how that was possible.

DR. C. W. TOWNSEND said that in regard to the rapidity of maceration after the death of the child, he had seen a case of transverse presentation where the child was alive and where the mother refused to have any operation done. He saw the case twenty-four hours later when she was brought to the Lying-in Hospital. Here, the child was delivered by version and was not only dead, but the skin was slightly macerated. The speedy maceration here might be due to the fact that the membranes had ruptured early.

DR. A. WORCESTER said he could go even further than this, for he had once delivered a child whose skin was macerated that lived.

**MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.**

HENRY JACKSON, M.D., SECRETARY.

REGULAR Meeting, Wednesday, January 17, 1894.
DR. F. C. SHATTUCK in the chair.

DR. R. C. CABOT presented a paper on
THE DIAGNOSTIC AND PROGNOSTIC VALUE OF LEUCOCYTOSIS.¹

DR. M. H. RICHARDSON: I should like to say a word in regard to the application of this method to surgical diseases. Dr. Cabot examined the blood in many of my cases this past summer, and his conclusions were almost invariably correct. Several of the cases which he has quoted were in my wards. With one exception we found pus every time the blood-count indicated it. Of course, in many instances we can tell well enough whether there is pus present or not without any such investigation; in other cases we cannot be sure, especially in the secondary abscesses which sometimes follow the drainage of appendicitis, in which one is very unwilling to stir up the abdomen without good reason. In one case referred to by Dr. Cabot, in which an appendix was removed at the end of the attack, there was a small amount of pus. Dr. Cabot is mistaken in regarding this case as aseptic.

¹ See page 277 of the Journal.

¹ See page 284 of the Journal.

The patient, a young man, had developed very serious symptoms some time after the appendix had been removed. There was nausea and vomiting, with pain and tenderness. The pulse and temperature were elevated. Yet beyond the probability of pus deeply seated somewhere, we could form no definite opinion. Dr. Cabot examined the blood, and found a leucocytosis that indicated pus. We therefore felt justified in exploring the wound—an operation which should be undertaken only when clearly indicated. Dr. Conant operated for me twice, and the boy recovered. The amount of pus was very large; it was deeply seated and gave no physical evidence of its situation. The only instance in which we were mistaken was a case of general peritonitis following appendicitis. My diagnosis the first day was appendicitis, and I advised immediate laparotomy. The others thought it was some acute condition not demanding interference; moreover, Dr. Cabot found no leucocytosis. Inasmuch as he had been invariably correct in previous cases, I decided not to operate. On the following day, for other reasons, we opened the abdomen. Dr. Shattuck on that day made the correct diagnosis of appendicitis with general peritonitis; I, meantime, changed my opinion. The patient's abdomen was distended with a very septic fluid; there was a gangrenous and perforated appendix, with a general purulent peritonitis. He died in the course of twenty-four hours.

From the surgical standpoint this subject is a very promising one. There is a very intimate connection between a leucocytosis and the presence of pathogenic micro-organisms. From the valuable work that Dr. Cabot has done, the treatment of patients has already been very materially improved. Further researches will undoubtedly give this method of investigation a still greater value in its practical application.

A question that arises frequently is, whether or not there is pus in the abdomen or in some of the closed cavities beyond reach. Now, if by such an examination as this we can be sure that, for instance, there is a perforation of the appendix or pus deeply seated in the abdomen, the vexed question of interference is decided at once. Moreover, if an expert examination of the blood is able clearly to demonstrate a condition of septic absorption; if, in connection with other symptoms, it can show unmistakably that there is a deep-seated focus of pus in the abdomen, in the thorax, in the head, or in a joint, it seems to me that we have added to our resources in diagnosis one of the most important and valuable aids of recent years.

Personally, I feel much indebted to Dr. Cabot for the work which he has done.

DR. F. C. SHATTUCK: I cannot forbear adding a word in expression of my appreciation of and interest in this paper. As I have watched Dr. Cabot's work in my ward and among my patients, I have learned to attach much value to this study which seems to me to promise great things for us in the future when thoroughly worked up.

DR. MASON: The very great interest of this subject is certainly apparent, and I have listened with great pleasure to the paper. There are one or two questions I should like to ask. In speaking of purulent meningitis, I suppose that would include the epidemic cerebrospinal form?

DR. CABOT: Only two counts were made.

DR. MASON: In that affection there is a good deal of purulent secretion within the head and spinal canal.

Cases are rare with us now; sometimes there is difficulty in determining the diagnosis with accuracy. I should think that blood examination would be very valuable. In one other affection I lately have been interested in having the blood counted; that was in a case of Graves's disease; and I should like to ask Dr. Cabot if, in his researches, he came across any statement with regard to that affection. Of course, it is pretty well known that internal abscesses give rise, as a general thing, to a greater or less degree of leucocytosis. In one case last year, or the year before, a liver abscess was explored for two or three times, and finally found, the blood-count having shown a high degree of leucocytosis. In the one case of Graves's disease I have observed there was no increase in the white elements.

DR. CABOT: I have counted only one case of Graves's disease, and in that the blood was normal. In those about which I have read the blood has been normal as far as the quantitative changes of the red to white were concerned.

Recent Literature.

Hand-book of Insanity. For Practitioners and Students. By DR. THEODORE KIRCHHOFF, Physician to the Schlerwig Insane Asylum and privat-docent at the University of Kiel. New York: Wm. Wood & Co. 1893.

Text-books on insanity are often abstruse through the use of new or unfamiliar terms, technical expressions and complicated classifications, which make them heavy reading for the student and general practitioner. When one appears, therefore, that is practical, simple and concise in statement, well arranged, accurate and complete in the consideration of the various aspects of mental disorder likely to interest the general physician, we have the model book for instruction. Such is the hand-book before us—a scientific work by an alienist of ability and experience and powers of observation and insight of a high order. It is up-to-date, clear in style, brief and correct. At the same time, its 358 pages are more complete in the number of subjects and points considered than any work we call to mind that is not an elaborate treatise on the disease. It is also a decided advantage that the space devoted to each subject is for the most part in direct proportion to its importance. The fact that it contains no allusion to the jurisprudence of insanity may be accounted for by the class of readers for whom the work is designed. The author's classification of the forms of insanity is a brief clinical one, which, if possibly too simple, has no more flaws than are common to all attempts to bend partially understood pathological conditions of the nervous system to a natural system of nosology.

The numerous illustrations are well executed and more than usually characteristic of the different forms. As a rule, there is more than one picture of the same patient in different aspects or stages of the disorder. These, with the explanations given in detail of the cause and import of the expressions and attitudes depicted, greatly enhance the value of the text.

To condense from the original so extensively, and at the same time to preserve and perhaps improve upon its simplicity and clearness, shows no ordinary

skill in translating and book-making. It is indeed surprising that under the circumstances so few obscurities have crept in. It is unfortunate that a poor index should mar, as it does, such a serviceable book.

The publishers contribute generous pages, good paper and clear type.

Supplement to the Reference Hand-book of the Medical Sciences. By various writers. Illustrated by Chromo-lithographs and fine Wood-engravings. Edited by ALBERT H. BUCK, M.D. Vol. IX. New York: William Wood & Co. 1893.

The original eight volumes constituting the "Reference Hand-book" were published between 1885 and 1889. In some departments of medical knowledge—notably in Pathology, Materia Medica and Therapeutics—there have been very considerable changes in and additions to our knowledge since then. The present supplement was undertaken in order to bring the hand-book as far as possible up to date without superseding the original work. In addition to a revision of previous articles, some articles on entirely new subjects, not previously discussed, have been incorporated. This volume contains 1,100 pages. There are 122 contributors. Many of the illustrations are very good. As a rule, the standard attained in the original volumes has been well maintained. The editor's work has been done with judgment and discretion.

The Theory and Practice of Medicine. Prepared for Students and Practitioners. By JAMES T. WHITTAKER, M.D., LL.D., etc., with a Chromo-lithographic Plate and three hundred Engravings. New York: William Wood & Co. 1893.

The author of this book is the professor of the subject about which he writes, in the Medical College of Ohio. The volume is an octavo of eight hundred pages. The first part is devoted to general diseases, takes up nearly half of the book, and is the most thorough. The second part is devoted to diseases of organs. Diseases of the nervous system occupy three chapters; and this is perhaps the least satisfactory part of the volume. The illustrations are numerous and of varying merit. The letter-press and paper are very good. A number of the chapters are condensed or adapted from the author's previous contributions to hand-books, systems or text-books of medicine.

Diseases of Childhood (Medical). By H. BRYAN DONKIN, M.A., M.D. Oxon., F.R.C.P., East London Hospital for Children, at Shadwell; Physician and Joint Lecturer on Medicine and Clinical Medicine, Westminster Hospital. New York: William Wood & Co. 1893.

In his new work on the medical diseases of children Dr. Donkin has made a most valuable contribution to our literature. It is in no way a compilation, but is the result of the author's own clinical observations, well put together and carefully analyzed. He has indeed adhered to his personal experience so closely as to omit any account of variola and the general subject of cutaneous affections, with which he says he has had but little to do. He has, however, in an appendix given us a summary of the conclusions from the latest report of the Clinical Society of London, and the incubation and contagious periods of the commoner infectious diseases, which is an admirable addition.

The fine press-work of this neat volume renders it all the more attractive.

THE BOSTON
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PROPOSED REDUCTION OF THE ARMY MEDICAL DEPARTMENT.

THE following are extracts from the draft of a proposed Army Appropriation Bill for the fiscal year beginning July 1, 1894, as submitted to the full Committee on Military Affairs by the Sub-Committee:

"Provided, That hereafter no appointment shall be made to the office of assistant surgeon-general with the rank of colonel until the number of such assistant surgeons-general shall be reduced below four, and thereafter the number of officers in that grade in the Medical Department shall be fixed at four; and no appointments shall be made to the office of assistant surgeon-general with the rank of lieutenant-colonel until the number of such assistant surgeons-general shall be reduced below six, and thereafter the number of officers in that grade in the Medical Department shall be fixed at six; and no appointments shall be made to the office of surgeon with rank of major until the number of such surgeons shall be reduced below thirty, and thereafter the number of officers in that grade in the Medical Department shall be fixed at thirty; and no appointments shall be made to the office of assistant surgeon until the number of assistant surgeons shall be reduced below ninety, and thereafter the number of officers in that grade in the Medical Department shall be fixed at ninety."

Fortunately the House Military Committee has listened to reason, and admitted the weight of argument against this proposal, and has abandoned the idea of reducing the number in the upper ranks of the medical corps; but it still proposes to cut off thirty-five assistant surgeons, bringing these down to ninety. This is by no means so bad (at least in its immediate action) as the original bill submitted by Mr. Outhwaite, of Ohio, Chairman of the Committee, from which we have quoted above. That bill, had it become law would have reduced the medical department two colonels, four lieutenant-colonels, twenty majors, and thirty-five junior officers; would have stopped all promotions and appointments in the corps for about eight years; and would have greatly injured the department. The present modified proposition, however, is bad enough, and is, from an economical point of view, unwise.

There are now barely enough medical officers to supply Posts, and it is forbidden to employ acting assistant surgeons. Moreover, when a competent physician has served in the army thirty-two or thirty-three years, as the ten senior army surgeons ranking as majors have done, he ought not only to have the chance to be paid a lieutenant-colonel's salary, but he also ought to feel secure in his position.

It is very desirable to have first-rate men in the army medical corps, men who may be detailed for important and delicate services; but to such the corps is already none too attractive. It now has six vacancies. Under such circumstances that is poor economy which threatens to lower the standard.

The idea of the promoter of this measure (for we credit him with some other purpose than simply posing as a watch-dog of the treasury) seems to be to retain merely a skeleton of an army medical corps in times of peace, and to supplement its deficiencies in time of war by surgeons drawn from civil life. This would be very poor economy. The civil surgeon may be available when wanted; he may know how to amputate a leg, dress a wound, or extract a bullet as well as the army surgeon, but he does not know the routine (call it red tape if you will) of the army service and of government bureaus. He does not know and cannot be expected immediately to know, how to provide and care for those under him. He is summoned when the emergency is great and immediate action is required. The hopeless and costly confusion existing in some of the government pension rolls to-day is partly due to this very thing. It has cost our taxpayers millions of dollars, which would have paid the salaries of many medical lieutenant-colonels, majors, etc., and still left much over to be appropriated in those forms of gross extravagance, such as river and harbor bills or sugar bounties, which are less vexing to the pious souls of Congressmen. There are two members of Congress from New England upon the House Military Committee, Mr. Gillett from Springfield, Massachusetts, and Mr. Lapham, from Rhode Island. We hope they may hear from their constituents in regard to this proposal. This is a matter in which the medical profession at large ought to interest itself.

RECENT INVESTIGATIONS OF THE BRITISH GOVERNMENT UPON THE INFLUENCE OF CERTAIN TRADES OR OCCUPATIONS UPON HEALTH.

DURING the past year special committees have reported to Parliament upon different industries of a dangerous character in which legislation seemed to be necessary for the protection of persons employed in them. The industries which were the subjects of report were the lead industries, lucifer-match works, potteries, chemical works and stone quarries.

Lead Industries.—This committee was directed to inquire (1) into the conditions under which lead smelting, the working of blue lead, and the production of

white lead, red lead and yellow litharge are conducted, with the object of diminishing any proved ill-effects upon the health of the work-people engaged therein; (2) whether the special rules which already exist with regard to the manufacture of white lead are sufficient; and (3) to suggest any precautions necessary to the industries specified for the protection of life or health. The committee was also charged with conducting farther special inquiries, including an investigation of the cause of death of a young woman engaged in lead-works.

In summing up the recommendations, which are very numerous and minute, the committee calls attention to the fact that the works in which the largest number of cases of lead-poisoning has occurred are those in which there has been the least expenditure of money and care in precautionary measures for the health of the operatives.

The greatest change which is recommended is the exclusion of females from all direct contact with white lead. The committee also records, as the result of its experience, the fact that lead, and all its compounds are in a greater or less degree poisonous, and that the handling or use of each or all of them is attended with danger.

Potteries (China and Earthenware).—This committee concludes that the potter's trade is attended with injury to health and life. The ill-effects are due to two causes: dust, and the poison of lead. The former is of wider action, since it pervades all the operations or processes wherein potter's clay and flint powders are in use. The latter prevails in the departments of work concerned in the glazing and coloring of the ware, after it leaves the hands of the potter. A third but less potent cause exists in the operations necessary to the completion of the ware by firing.

The committee presents statistics in support of their conclusions, showing that the inhaling of the noxious dust of clay and flint is a fruitful cause of diseases of the respiratory organs. The mortality returns of Stoke-upon-Trent for 1890 show that, of the males over fourteen years of age who were potters, 42 per cent. died of bronchitis, 8 per cent. of pneumonia and pleurisy, and 21 per cent. of phthisis. In a general way it was also shown that only 4.5 per cent. of potters died of senile decay, and 12.5 per cent. of persons who were not potters, a fact which shows that potters generally die young.

The committee found that much of the mortality from lead-poisoning was avoidable, although no code of regulations could entirely obviate the effects of the poison to which the workers were exposed.

The following modes were indicated by which the poison gains access to the body: (1) by eating food with unwashed hands, or partaking of it in the rooms where lead is dealt with; (2) by neglect of cleanliness of clothing; (3) allowing glaze and colors to drop about, become dry, and so form dust which is inhaled; (4) holding the pencil used in painting, in the mouth, as is done by women employed in majolica painting;

(5) rubbing the eyes with dirty hands; (6) near-sight-ness, causing the workers to be too close to their work; (7) constitutional idiosyncrasy, producing excessive susceptibility to lead-poisoning.

The committee formulated a code of regulations which, if established and enforced in every pottery, would greatly diminish the injurious effects of the different processes of manufacture. These rules had reference mainly to personal cleanliness, and the cleanliness and ventilation of the work-rooms, the employment of females and children under fourteen, and the eating of food upon the premises.

Lucifer-Match Works.—The special danger to which persons engaged in the manipulation of phosphorus are exposed, is necrosis. The committee appointed to consider this trade recommended several rules. These provided for the isolation of certain processes from other parts of the factory, with thorough ventilation in apartments where such processes were conducted; that hot and cold water, soap, nail-brushes and towels should be furnished, and the operatives required to use them; that all workers should be examined, at least once a month by a surgeon, who should have power to order temporary suspension or total change of work for any one showing symptoms of incipient necrosis; that all persons complaining of toothache or swelling of the jaws should be examined at once; that no person should be permitted to work in the processes of mixing, dipping, drying or boxing, after the extraction of a tooth, without the certificate of a duly qualified medical practitioner, that the jaw is healed. Penalties were recommended for neglect to comply with these rules.

Chemical Works.—The committee upon these industries was charged with duty of inquiring "into the dangers to life, limb and health attending employment in chemical works," with a view to discover "(1) how far the manufactures, as at present carried on, injuriously affect the health of the work-people, and how far the injurious effects depend on the age and sex of the operatives; (2) what means can be adopted to abate the injurious effects of the manufacture; (3) what special regulations should be adopted to protect vats and other dangerous places and utensils used in the manufacture."

The manufacture of bleaching-powder is by far the most harmful to the operatives, of any department of chemical work. Lime is treated in chambers with chlorine gas, which is absorbed by the lime. At the end of four days the doors are opened, and men enter the chambers to pack the lime. In disturbing the powder free chlorine gas is let loose. The packers are obliged to wear respirators or muzzles of thirty folds of damp flannel, tightly tied over the mouth, the nose being free; the men inhale through the muzzle and exhale through the nose. If they happen to reverse the process they became "gassed." The exertion of breathing through the thick folds of flannel shows itself in the red and puffed state of the men's faces and profuse perspiration in coming out of the

chambers, which they are obliged to do at intervals. The lime-dust also injures the eyes. None but robust men could endure this work. The sufferings of these operatives are vividly portrayed in the "minutes of evidence."

Question 22,515. What you suffer from is the escape of chlorine gas, I suppose?

Yes, that is what we suffer from. When we go into the chamber, sometimes we are not able to stop there five minutes, sometimes a quarter of an hour, sometimes half an hour, sometimes you cannot stop two minutes.

Question 22,556. Have you anything further you would like to say to the Commission?

I have got the muzzle with me. (Witness puts on the muzzle.)

Question 22,557. Whenever you are packing in a hot chamber you are obliged to use that?

Yes.

Question 22,558. And no man could enter the chamber without it?

No! they could not put their noses inside.

Question 22,559. It is nothing but ordinary flannel?

Yes.

Question 22,560. Several folds of ordinary flannel?

Yes; it must be the best flannel. It has to be renewed; it gets eaten away with the gas.

In another inquiry of the same character, made by an English trade-journal, a workman said: "Every man is liable to a visit of the gas right through the muzzle." Gassing is such a common matter that the men readily describe its symptoms. "Is it ever fatal?" — "Yes, sometimes."

A workman's clothes-bill for a fortnight amounted to fifteen shillings. The shirt was torn, and in several parts hung in strips. It was hardened by acid or powder, and tore freely. This shirt had seen two days' work, and was now good for nothing.

"If a premium of £100 were to be offered by the alkali magnates, there would be clothing (diving-suits) put together in no time, with proper air-pumps, and an anti-corrosive coating which would resist the rasping and tearing of the dust and gas. The directors might do worse than keep the photographs of the powder-packer's head, which appeared last week, on their breakfast-tables and in their board-room, just as a reminder."

In the salt-cake (sulphate of soda) department, the danger is from the escape of hydrochloric-acid gas. Many workmen have had their teeth entirely destroyed by its effects.

In the manufacture of caustic soda, the danger results from the splashing of the liquor, and frequent injury to the eyes.

In the manufacture of chlorates, the chief danger is from explosions, and the saturation of the clothing with the dust and its taking fire.

In making bichromate of potash and soda, the committee found that almost all the men working where dust was prevalent had either perforation of the septum of the nose, or had lost the septum altogether. These results often cause partial or complete loss of the sense of smell, with irritation and ulceration of the throat,

trachea and bronchial tubes. Many of those employed suffer from what are called "chrome holes" in their hands and arms, caused by dust or liquor acting on the broken skin, or by handling the crystals.

The medical officers of the commission suggested the following as means of lessening the evils of working in the bleaching-chambers:

(1) Free and thorough ventilation in and about the bleaching-chambers.

(2) Oiling or greasing the exposed parts of the body before beginning work, the wearing of "goggles," and the introduction at intervals of a few drops of oil into the eyes for their protection.

(3) Let the respirators be moistened from time to time with a solution of sulphide of soda. If this suggestion were carried out, the "muzzles" might be made much thinner than at present, and the men could breathe with greater freedom and safety.

To obviate the evils caused by the inhalations of the dust of chrome compounds, the following is advised: Let the sponge or other absorbent material of the respirator be moistened with a solution of bismuth (Liquor bismuthi, B. P.). The chrome dust coming in contact with this is decomposed. The same result might be attained by plugging the nostrils with cotton-wool, moistened in the same solution. Frequent washing of exposed parts of the body is desirable, and protection of the hands with water-proof gloves.

Stone Quarries. — The committee upon this subject was required to report upon the dangers to life, limb and health, attending employment in open quarries. The field of inquiry included operations conducted in nearly every county of the kingdom, the number of persons thus employed in 1891 being 121,637; but the sessions of the committee of which the minutes of evidence are published, were mostly held in the quarry-regions of Wales.

Dr. Ogle, of the Registrar General's Office, who appeared before the committee, stated that the mortality of quarrymen from phthisis and respiratory diseases was very high (three times as high as that of fishermen), and that, in his opinion, this excessive mortality was due to the inhalation of stone-dust.

MEDICAL NOTES.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA. — There are 801 active students in the Medical Department of the University of Pennsylvania this term, 45 less than last year, which was the largest number yet registered.

THE DEATH OF MRS. CHARLES L. DANA. — Dr. Charles L. Dana, of New York, will have the sympathy of his personal and professional friends in his recent bereavement in the loss of his wife, who died in Bermuda on March 8th, from injuries received in a carriage accident.

THE POSSIBILITIES OF CHEMICAL NOMENCLATURE. — The possibility for a chemist to tell all that is

in a substance by its name, is well illustrated by one of the new synthetic remedies, which has the simple cognomen of monosodic methylamido brommethyl propylamine-benzol.

CHOLERA IN TRIPOLI.—Cholera is officially reported to have broken out at Tripoli. Several cases of the disease have occurred in the military hospital outside the town.

INFLUENZA AT GENOA.—During the past month the influenza has been violently epidemic at Genoa. Over twenty thousand cases have been reported to the health authorities, and the daily mortality of the city has risen from twelve to fifty.

SMALL-POX ON A UNITED STATES WARSHIP.—Information has been received from China that the United States warship *Monocay* reached Woe Sung from Chin Kiang on the 11th of February with several cases of small-pox on board. Six of her crew were taken to the general hospital at Shanghai.

THE CHICAGO CURSING DOCTOR.—A "Doctor" McFadden died recently in Chicago, who had not a little reputation as a cursing doctor. His sole method of treatment was by laying on of hands and swearing at the evil spirit or disease until it left the patient. His cursing was not a simple exorcism, but was genuine Billingsgate, unpurged and unrefined. He had a large and rather lucrative practice.

THE DIAGNOSIS OF APPENDICITIS IN A TIGER.—A tiger in a Wisconsin circus was recently operated upon for "appendicitis." According to the newspaper account, "He clawed his abdomen so that it was guessed he had the disease. He was securely chained and muzzled, and a doctor cut into him. In the inflamed sac was found the rim of a pair of spectacles. The tiger foamed with rage while the operation was in progress."

CHOLERA INSURANCE FOR RUSSIAN PHYSICIANS.—In the Russian province of Wiatka, a resolution was recently adopted at a general meeting of the citizens for insuring the lives of medical and surgical practitioners against cholera. From the funds of the province on deposit in the imperial bank, the family of a physician practising within the province will receive upon his death by cholera the interest on 5,000 roubles, or on 8,000 if he has practised within the province ten years. A surgeon's family will receive the interest on 1,000 roubles.

CANNED VEGETABLES CONTAINING POISON.—In the course of investigations made last year by the Chemical Division of the Department of Agriculture 80 samples of canned and bottled peas were examined, 43 of American and 37 of foreign origin. All of the foreign brands, except two, contained copper; one contained zinc. Fourteen of the 43 American samples contained copper; 29 did not. Salicylic acid was present in five French and 10 American samples. Tin was present in 50 samples, lead in 50, and zinc in 15. In all, 248 samples of all sorts of vegetables were examined, and in no less than 121 was salicylic acid

detected. Zinc was found in 40, copper in 88, and lead in 182.

THE NEW YORK PASTEUR INSTITUTE.—The statistics for the preventive treatment against hydrophobia of the New York Pasteur Institute for 1893 show that there were 26 patients who were bitten by animals in which hydrophobia was evidenced by experimentation or by the death of some other person or animal bitten by them; 11 patients who were wounded by animals recognized as rabid by clinical or veterinary examination; and 48 bitten by animals in which rabies was suspected, but who were killed or lost sight of before any proof was obtained. No deaths occurred in any of the patients. Forty-five of them had had the wounds cauterized before entrance, but in all cases in an insufficient and non-efficacious manner. The 104 patients treated in 1892 have all remained free from disease up to the present time.

ANOTHER DANGEROUS PASTIME.—Another good out-door sport has been added to the list of dangerous games, fortunately before it has become so deeply rooted in the affections of our youth that they cannot be kept from its harm. Golf-playing is the cause of severe gluteal strain, with possible rupture of fibres in the anterior portion of the muscle which is made over-tense in the position of "driving strokes." Two such cases have been reported already in the *Lancet*.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, March 21, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 31, scarlet fever 33, measles 26, typhoid fever 13, small-pox 6 (2 deaths). There are now 15 patients in the Canterbury Street Small-pox Hospital. During the week 9 cases of small-pox were reported to the State Board of Health from Holyoke.

A SCHOLARSHIP IN MEMORY OF DR. CHARLES PRATT STRONG.—A number of friends of the late Dr. Charles P. Strong, of Boston, have given to Harvard University the sum of \$3,750 to found a memorial scholarship in the Medical School. For the present, all income from this sum over one hundred dollars is to be added to the principal until that reaches five thousand dollars.

THE MEDICAL REGISTRATION BILL BEFORE THE MASSACHUSETTS LEGISLATURE.—A majority of the Committee on Public Health have reported to the Legislature a bill to control (?) the practice of medicine in this State. A minority, among whom is Senator Harvey, of Worcester County, have offered an adverse report.

MEASLES, JUDGMENT AND DISCRETION.—A suburban board of health offers the following piece of wisdom, as advice to the people whom it is called upon to protect: "The Board is of the opinion that it is not wise to try and stop the spread of measles among children, for it is one of the diseases that a large majority of the people are liable to have during their lives, and

it is a well-settled fact that it is more dangerous and troublesome with older people than with the young." And furthermore the same board says: "It is very important that men of *experience, judgment and discretion* should be selected," as members of boards of health.

How does the foregoing statement appear in the light of the following facts, taken from the State Registration Report for the year 1890 (page 321)? Number of deaths from measles in Massachusetts, for the twenty-eight years ending with 1890, 5,649; of this number 5,078, or 89.8 per cent., were children under ten years of age; and 4,581, or 81 per cent., were children under five years of age.

REQUESTS TO MEDICAL CHARITIES.—The will of the late Rufus S. Frost bequeaths the sum of one thousand dollars to the Chelsea Day Nursery, and five thousand dollars to the R. S. Frost General Hospital for the establishment of a free bed.

A GENEROUS BEQUEST TO YALE UNIVERSITY.—The will of Mr. Richard S. Ely of New York, after leaving many bequests to charitable institutions, creates of the remainder of his estate a trust for Yale University, the income to be used to found professorships in the medical, law and academic departments. The estimated value of this trust is between fifty and one hundred thousand dollars.

NEW YORK.

TWO DRACHMS OF MAGENDIE'S SOLUTION GIVEN BY MISTAKE.—At the New York Hospital one of the female nurses recently gave a patient two drachms of Magendie's solution of morphia by mistake, in consequence of which he died. The man, whose name was Conway, was suffering from fracture of the skull and other injuries, the result of a fall from the elevated railroad, on which he was employed as a track-walker. It is believed, however, that the injuries would have proved fatal had the morphia not been given. At the inquest the nurse stated that at about 8.30 P. M., one of the house-staff of surgeons administered a hypodermic injection of Magendie's solution to a patient in the bed next to Conway's, after which the bottle was handed to her to place in a medicine cabinet. A few minutes later she administered to Conway two teaspoonfuls of what she supposed to be the old U. S. P. morphia solution of the strength of a grain to the ounce. When he had swallowed it she discovered that she had given him Magendie's solution instead, and notified the doctor. The stomach pump was employed and other appropriate measures taken, but during the night the man died. Dr. Donlin, the coroner's physician who made the autopsy in the case, expressed the opinion that Conway could not possibly have survived his injuries, and stated that he found that the base of the skull was badly fractured and the tissue of the brain severely lacerated; in addition to which the clavicle and four of the ribs were broken.

A BILL TO ESTABLISH A STATE COLONY FOR EPILEPTICS.—There was a hearing March 7th on the bill now before the legislature, to establish a State

colony for epileptics. The scheme as perfected in the pending bill has the strong endorsement of the State Board of Charities, the State Charities Aid Association, the State Commission in Lunacy, and the Convention of Superintendents of the Poor.

AN OUTBREAK OF TYPHOID FEVER AT BUFFALO.—A serious outbreak of typhoid fever has occurred at Buffalo. Up to March 15th there were reported 236 cases and 20 deaths. There seems to be no doubt that the disease is due to the impurity of the water supplied to the city, and on March 18th the Mayor called an emergency meeting of the Board of Health to take measures to suppress the epidemic. It seems that three weeks before the cases of typhoid commenced to develop, the Water Department, in filling a new reservoir, took water from what is known as Bird Island inlet, a source of supply which is contaminated by city sewage, and which was last autumn condemned on this account by Health-Commissioner Wende.

A BEQUEST TO ST. LUKE'S HOSPITAL.—By the will of the late Richard S. Ely, the sum of \$90,000 is left to various charitable objects. The largest single bequest is that to St. Luke's Hospital, amounting to \$20,000.

Miscellaneous.

THE DERMATOLOGY OF TO-DAY.

In his presidential address delivered before the Harveian Society of London,¹ Mr. Malcolm Morris, reviewing the progress recently made in dermatology, said:

"The change, not merely in details, but in fundamental principles of treatment, is the result of the new light which experimental pathology has thrown on the nature of disease-processes and on the factors concerned in their production in the skin as in other organs. . . . We now recognize the precise microbic agents which produce lupus, scrofuloderma, impetigo, leprosy or glanders. It is not only as primary causes, however, that the importance of the part played by micro-organisms in the genesis of skin diseases has come to be acknowledged, the effects of their activity as secondary causes are now seen to be still more far-reaching. . . . In the domain of practice the teachings of bacteriology have borne fruit in the extensive use of parasiticide agents. There is hardly a case of skin disease in which at some period or another of its course antiseptic and antiparasitic remedies are not indicated. The ideal antiseptic still remains to be discovered. I have so often found the latest products of the chemical laboratory fail to come up to the expectations that I had been led to form of them, that I can only conclude that the power of a substance to destroy or check the growth of micro-organisms in a test-tube is no measure of its therapeutic potency when applied to the human skin.

"It is not so much in the discovery of new remedies as in the improvement in the means and manner of applying those already known that progress has chiefly been made in recent years. . . . The intro-

¹ British Medical Journal, January 27th.

duction of superfatted soaps, and cleanly pastes and jellies has been of the greatest value. These methods of applying medicaments to the skin are as superior to those used by our predecessors of not many years ago, as the Henry Martini's and magazine guns of the present day are to the muskets with which Wellington's battles were won. I do not say that we are better men than those who have gone before us, but assuredly we are better armed.

"All this has led to a truer understanding of the insufficiency and folly of dietetic treatment of skin diseases and to a more intelligent control of the general medication. In the application of local treatment, for which we have better vehicles and better remedies, there are two essential conditions of success: first, the strength of the remedy must be carefully tempered to the disease; and, secondly, the application must be not only thorough but continuous."

Of massage, he says:

"Wherever there is effusion that cannot find an exit on the surface; wherever there is pain from pressure of imprisoned fluid or thickened tissues on the nerve ends; wherever there is stagnation of the blood stream, there massage is likely to be useful by its mechanical action on the parts to which it is applied. That, however, is the limit of its therapeutic virtue. . . .

"Almost the only distinct evidence of progress apart from local treatment to which I can point, is the fuller recognition which has been arrived at of the influence of the nervous system in the production of skin affections. . . . The knowledge of the intimate pathological connection between the nervous system and the skin gives the key to the successful treatment of many cases which defy all local measures."

AN ECCENTRIC RUSSIAN PHYSICIAN.

PROFESSOR ZAKHARIN, of Moscow, one of the physicians in attendance on the Emperor of Russia, and since the death of Dr. Botkin, the leading consultant in Russia, is renowned for his eccentricities as well as for his skill.¹

On entering a house he requires all the doors to be left wide open, all the clocks stopped, and dogs to be securely fastened away from his presence. He removes his over-garments gradually and never all in one place, his furs in one room, his over-shoes in the next, his gloves in a third, and so on. He insists on absolute silence on the part of the patient and the family, and will have no question answered save by "Yes," or "No." His dread of over-influence is almost a monomania; and his attention to detail is such that even in the simple cases he investigates the whole family history and social relations before directing treatment. His examination of the patient is sometimes three hours long—even in ordinary conditions.

One of his favorite theories is that of an idiopathic hypertrophy of the heart, upon which he has based a rule of living: "It is necessary to rest *before* getting tired." Accordingly he has the habit of sitting down every seven or eight steps.

Zakharin is now sixty-five years old, has been professor of clinical medicine at Moscow for thirty-five years, and is reported to have acquired over a million dollars.

¹ La Médecine Moderne, No 15, 1894.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 10, 1894, TO MARCH 16, 1894.

Leave of absence for six months, to take effect on or about May 1, 1894, with permission to go beyond the sea, is granted CAPTAIN WALTER W. R. FISHER, assistant surgeon, U. S. A.

By direction of the President, the retirement from active service, March 13, 1894, by operation of law, of MAJOR JOHN H. BARTHOLOMEW, surgeon, U. S. A., under the provisions of the act of Congress, approved June 30, 1882, is announced.

FIRST-LIEUT. PAUL F. STRAUSS, assistant surgeon, U. S. A., is relieved from duty at Fort Riley, Kansas, and ordered to report in person to the commanding officer, San Carlos, Arizona, for duty at that post, relieving FIRST-LIEUT. HARLAN E. McVAY, assistant surgeon, U. S. A.

FIRST-LIEUT. McVAY, on being relieved by FIRST-LIEUT. STRAUSS, will report in person to the commanding officer, Whipple Barracks, A. T., for duty at that post.

A board of officers to consist of LIEUT.-COL. CHARLES R. GREENLEAF, deputy surgeon-general; LIEUT.-COL. ALBERT HARTSUFF, deputy surgeon-general, U. S. A.; MAJOR BENJAMIN F. POPE, surgeon, is appointed to meet at the call of the president thereof, at San Francisco, Cal., for the examination of CAPTAIN WILLIAM R. HALL, assistant surgeon, with a view of determining his fitness for promotion, as contemplated by the acts of Congress approved October 1, 1890, and July 27, 1892.

CAPTAIN HALL will report in person to the president of the board for examination at such time as he may designate.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 17, 1894.

L. W. SPRATLING, surgeon, ordered to the U. S. S. "Alert."

E. J. DEERE, surgeon, ordered to the U. S. S. "Raleigh."

E. M. SHIFF, assistant surgeon, ordered to the U. S. S. "Raleigh."

W. C. BRAISTED, passed assistant surgeon, ordered to hold himself in readiness for U. S. S. "Columbia."

G. E. H. HARMON, surgeon, from the U. S. S. "Yorktown" and three months' leave.

G. P. LUMSDEN, passed assistant surgeon, ordered to the U. S. S. "Yorktown."

APPOINTMENTS.

At the last regular meeting of the Board of Managers of the Massachusetts Charitable Eye and Ear Infirmary, DR. HENRY L. SHAW was elected as consulting surgeon; DR. FREDERICK E. CHENEY was elected as ophthalmic surgeon; DR. ALEXANDER QUACKENBOSCH was elected as assistant ophthalmic surgeon and DR. ALMON G. MORSE as ophthalmic house officer.

DR. PAUL THORNDIKE has been appointed surgeon to outpatients at the Boston City Hospital.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, March 28th, at 8 o'clock, by Dr. J. J. Putnam. Subject, "The Present Status of the Therapeutics of Nervous Diseases." Physicians are cordially invited.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, March 26, 1894, at 8 o'clock, P. M.

Dr. E. H. Bradford: "Sprains and Disabled Joints." Discussion opened by Drs. W. M. Conant and R. W. Lovett.

Dr. A. Coolidge, Jr.: "Deviations of the Cartilaginous Septum." Discussion opened by Dr. J. W. Farlow.

JOHN T. BOWEN, M.D., Secretary.

NORFOLK DISTRICT MEDICAL SOCIETY.—The Brookline Fellows of the Norfolk District Medical Society cordially invite the Society to a Meeting for Scientific Improvement, to be held at the Town Hall, Brookline, on Tuesday, March 27, 1894, at 7.15 P. M.

Subject for discussion, TUBERCULOSIS. "The Natural History of the Tubercle Bacillus," S. A. Houghton, M.D. "Tuberculosis in Cattle, its Detection, Prevalence, etc.," F. H. Osgood, M.R.C.V.S. "The Treatment of Laryngeal Phthisis," S. W. Langmaid, M.D. "Tuberculosis in Mental Disease," W.

Channing, M.D. "Home Treatment of Phthisis," G. K. Sabine, M.D. "The Application of Climatic Therapeutics to Pulmonary Tuberculosis," E. O. Otis, M.D. Dr. F. C. Shattuck will open the discussion.

Lunch at 2.45 P. M.

J. C. D. Paxon, M.D., Secretary.

RECENT DEATHS.

DR. GIUSEPPE DAGNA, Emeritus Dean of the Medical Faculty of the University of Pavia, died February 3d.

SURGEON-COLONEL ARCHIBALD HAMILTON HILSON, M.D., C. I. E., late inspector-general of Civil Hospitals, Bengal, and one of the heroes of the Sepoy Revolt of 1857, died January 4th, aged fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Dartmouth Medical College Catalogue, 1893-94.

Massachusetts Institute of Technology, Boston, Annual Catalogue, 1893-94.

Massachusetts Institute of Technology, Annual Report of the President and Treasurer, December 13, 1893.

Society of the Lying-in Hospital of the City of New York, Midwifery Dispensary Medical Report. 1893.

Enterorrhaphy; Its History, Technique and Present Status. By N. Senn, M.D., Ph.D., LL.D. Reprint. 1893.

The Discovery of Anesthesia. By Whom Was It Made? A Brief Statement of Facts. By Dr. Laird W. Nevins.

Treatment of Depressions in the Skull of the New-born. By David D. Jennings, M.D., New York. Reprint. 1894.

Cleft of the Hard and Soft Palates. Naso- or Retro-Pharyngeal Growths. By J. Ewing Mears, M.D., Philadelphia. Reprints. 1893.

Transactions of the Medical Society of the State of North Carolina, Fortieth Annual Meeting held at Raleigh, N. C., May 9, 10 and 11, 1893.

Longevity, with a List of Persons Known to have Lived One Hundred Years or More. By Archer Atkinson, M.D., of Baltimore, Md. Reprint.

The Year-Book of Treatment for 1894; A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1894.

Transactions of the American Pediatric Society, Fifth Session. Edited by Floyd M. Crandall, M.D. Volume V. Printed by Bailey & Fairchild. 1893.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia College, N. Y. Vol. III. For the Collegiate Year, 1892-93. Reprints.

Grundriss der Histologie für Studierende und Aerzte. Von Dr. Bernhard Rawitz, Privatdozenten an der Universität, Berlin. Mit 204 Abbildungen. Berlin: S. Karger. 1894.

Studier öfver Transitorisk Albuminuri Hos Till Utseendet Friaka Personer. Af Thorbjörn Hwass, Med. Dr., Docent, Stockholm. Stockholm: P. A. Norsteat & Soner. 1893.

Die Infectious-Krankheiten, ihre Entstehung, ihr Wesen und ihre Bekämpfung. Für Aerzte und Verwaltungs-Beamte von Dr. W. Plange, Kgl. Kreisphysikus. Berlin: S. Karger. 1894.

Cases to Illustrate the Relationship which Exists between Wryneck and Congenital Hematoma of the Sterno-Mastoid Muscle. By D'Arcy Power, M.A., M.B., Oxon., F.R.C.S., Eng. Reprint. 1894.

Report of a Case of Cerebral Tumor, Diagnosed by Focal Symptoms, with Operation, Successful Removal of Tumor and Exhibition of Specimen. By D. A. K. Steele, M.D., Chicago. Reprint. 1894.

A Manual of Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1894.

The Relation of Peripheral Irritation to Disease; Considered from a Therapeutic Standpoint. Therapeutic Reflections; A Plea for Physiological Remedies. By Simon Baruch, M.D. Reprints. 1890-93.

Pain, Pleasure and Aesthetics, An Essay Concerning the Psychology of Pain and Pleasure, with Special Reference to Aesthetics. By Henry Rutgers Marshall, M.A. London and New York: Macmillan & Co. 1894.

Congenital Affections of the Heart. By George Carpenter, M.D., Lond., Member of the Royal College of Physicians; Senior Physician to Out-patients at the Evelina Hospital for Sick Children, London. London: John Bale & Sons.

Tables and Notes on Human Osteology, for the Use of Students of Medicine. By Sebastian J. Wimmer, M.A., M.D., with a preface by Prof. William F. Waugh, A.M., M.D. Philadelphia: The Medical Publishing Co. 1894.

Scarlatina and Scarlatinal Sore Throat; A Record of Milk Infection. By Arch. K. Chalmers, M.D., Ph.D., P.H. (Camb.), one of the Medical Officers of Health for the County of the City of Glasgow. Glasgow: Robert Anderson. 1894.

Excision of the Hip-Joint in Tubercular Disease. Circular-Saw Injury. The Early Removal of Tubercular Foci of the Bone. Primary Syphilis and Gonorrhoea in Children. By B. Merrill Ricketts, M.D., Cincinnati, O. Reprints. 1893.

Pigmentation of the Whole Surface of the Body, Occurring Suddenly during the Treatment of a Case of Psoriasis; Wart Growths upon the Palms and Soles following the Internal Use of Arsenic. By Albert E. Carrier, M.D., of Detroit. Reprint. 1894.

Modern Homoeopathy; Its Absurdities and Inconsistencies. By William W. Browning, A.B., LL.B., M.D., Brooklyn, N. Y., Lecturer Upon and Demonstrator of Anatomy, Long Island College Hospital, etc. Philadelphia: Press of Wm. F. Fell & Co. 1894.

Tumors, Innocent and Malignant, Their Clinical Features and Appropriate Treatment. By J. Bland Sutton, Assistant Surgeon to the Middlesex Hospital, London. With two hundred and fifty engravings and nine plates. Philadelphia: Lea Brothers & Co. 1893.

Hospital Dispensaries and Nursing; Papers and Discussions in the International Congress of Charities, Correction and Philanthropy, Section III, Chicago, June 12 to 17, 1893. Edited by John S. Billings, M.D., Henry Hurd, M.D. Baltimore: The Johns Hopkins Press. 1894.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By Richard C. Norris, A.M., M.D., Demonstrator of Obstetrics, University of Pennsylvania; Assistant Obstetrician, University Maternity, etc. Third edition. Philadelphia: W. B. Saunders. 1894.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, etc. Illustrated with one hundred and sixty-two wood-cuts and two colored plates. Philadelphia: Lea Brothers & Co. 1894.

Suicide and Insanity; A Physiological and Sociological Study. By S. A. K. Strahan, M.D., Barrister-at-Law; Fellow of the Royal Statistical Society; Member of the Medico-Psychological Association of Great Britain and Ireland; Member of the Medico-Legal Society of New York, etc. London: Swan, Sormenschein & Co. 1893.

Essentials of Physics, Arranged in the Form of Questions and Answers, Prepared especially for Students of Medicine. By Fred J. Brockway, M.D., Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, New York. Second edition, revised, with one hundred and fifty-five illustrations. Philadelphia: W. B. Saunders. 1894.

Medical Jurisprudence, Forensic Medicine and Toxicology. By E. A. Whitthaus, A.M., M.D., Professor of Chemistry, Physics and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A.B., LL.B., Counsellor-at-Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Vol. I. New York: William Wood & Co. 1894.

Total Extirpation of the Uterus; Cases Illustrating Various Indications for and Different Methods of Performing the Operation; Remarks upon Removal of the Uterus in Diseases of the Appendages. The Technique of Total Extirpation of the Fibromatous Uterus. The Operative Treatment of Complete Prolapsed Uteri et Vaginae. By George M. Edebohl, A.M., M.D. Reprints. 1892-93.

Poltz's Text-Book of the Diseases of the Ear and Adjacent Organs, for Students and Practitioners. Translated by Oscar Dodd, M.D., Assistant Surgeon at the Illinois Charitable Eye and Ear Infirmary, etc. Edited by Sir William Dalby, F.R.C.S., M.B., Cantab., Consulting Aural Surgeon to the St. George's Hospital. With three hundred and thirty original illustrations. Philadelphia: Lea Brothers & Co. London: Baillière, Tindall & Cox. 1894.

Syphilis in the Innocent (Syphilis Infantum), Clinically and Historically Considered with a Plan for the Legal Control of the Disease. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital, etc. The essay to which the College of Physicians of Philadelphia in 1891 awarded the Alvarenga Prize for the best Memoir on any medical subject. New York: Bailey & Fairchild. 1894.

An American Text-book of the Diseases of Children, Including Special Chapters on Essential Surgical Subjects; Diseases of the Eye, Ear, Nose and Throat; Diseases of the Skin; and on the Diet, Hygiene and General Management of Children. By American Teachers. Edited by Louis Starr, M.D., Physician to the Children's Hospital and Consulting Pediatricist to the Maternity Hospital, Philadelphia, etc., assisted by Thompson S. Westcott, M.D., Attending Physician to the Dispensary for Diseases of Children, Hospital of the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1894.

Original Articles.

THE OPERATIVE TREATMENT OF UTERINE FIBROIDS.¹

BY E. W. CUSHING, M.D., BOSTON, MASS.

Of all the advances in surgery achieved during the last few years none has been more surprising or more gratifying than the improvement in the methods and in the results of the operative treatment of fibro-myomata of the uterus; while at the same time the more accurate knowledge of the clinical history and morbid degenerations of the neoplasma, which has recently been obtained, has introduced entirely new views as to the indications which call for operation and as to the dangers which are incurred by neglecting such growths until the life of the patient is actually endangered by their presence.

It is not very many years since, on the one hand, a uterine fibroid was regarded as a wholly benign growth almost sure to cease increasing, or to diminish, at the menopause; while, on the other hand, the results in the few cases subjected to operation were so unsatisfactory that there was but little encouragement for surgeons to persevere in attempting to remove these growths. Thus Mathews Duncan could say, "Whoever heard of any one dying of a fibroid tumor?" while physicians everywhere sharing his views created a body of professional sentiment which has come down to the present day, regarding such growth as comparatively innocuous, and strongly discouraging all operative interference, even in extraordinarily severe cases, until the life of the patient was in imminent danger. On the other hand, as good operators as Sir Spenser Wells, a man already distinguished in abdominal surgery and experienced in the removal of ovarian tumors, would entirely refuse to interfere with uterine fibroids; and if by chance one was disclosed on opening the abdomen for the removal of an ovarian tumor, far from proceeding with the removal of the growth, they would close the abdomen and in confusion lament the error of their diagnosis.

As the natural consequence of these views and conditions, hysterectomy was only performed as a last and desperate resort in patients who were sinking from hemorrhage, or from exhaustion incident to the growth or degeneration of the tumor. And it is little wonder that the mortality was high. The pioneer work in this operation was done in Massachusetts by those determined operators, Burnham and Kimball, of Lowell. Burnham's first operation was performed June 26, 1855, the patient being still alive in 1884. It is conceded that this was the first removal by abdominal section of the uterus and appendages for fibroid disease. Burnham operated 15 times with 12 deaths, a mortality of 80 per cent.; while his mortality in 338 cases of abdominal section of all kinds, including the hysterectomies, was 25 per cent., that from 238 complete ovariectomies being 20 per cent.²

By improvement of technique, and by the growth of institutions where a large number of cases could be operated upon under improved conditions by trained surgeons, the mortality from hysterectomy was gradually reduced from 80 per cent. to 60 and 50 per cent.

and finally to about 85 per cent., where it stood some ten years ago at the beginning of the era of advances in abdominal surgery. Since then the reduction of mortality has gone on progressively; but it is of the utmost importance to remember that the improved results are not all due to the improvement of surgery, but are due to the fact that the operation is now performed before the patients are so reduced as to have thrown away most of their chances of recovery.

Nevertheless, grim and lamentable cases still occur too often, where, either from timidity on the part of the patient, or oftener from bad advice and mistaken ideas on the part of her medical adviser, the time for favorable operation has passed by. The chances of recovery have been cruelly thrown away by miserable delay and worse than useless treatment, until the patient is delivered to the surgeon sinking under her burden, a subject for a hazardous and gruesome operation, and likely then to die, leaving grief to the friends, blame to the surgeon and discredit to the profession.

We are passing through the same change in theory and practice in regard to fibroid tumors which has already been accomplished in regard to ovarian growths. With the gradual enlightenment of the profession and of the public, it is now rare to find the formidable cases of huge neglected ovarian tumors which were formally so frequently brought to surgeons for operation. No one will now maintain, as was formerly done, that an ovarian cyst should not be removed until its presence actually threatens the life of the patient. Instead of throwing away the chances of the patient by delay, by treatment, by repeated tappings, all competent physicians now recommend removal of an ovarian cyst as soon as its presence is detected, with the result that the operation in these early cases has become practically free from mortality; it is approached with confidence; it is accomplished with facility; it is a grateful interlude between the serious acts of important abdominal surgery.

Now, in regard to uterine fibroids a similar course of reasoning will apply, *mutatis mutandis*; like ovarian tumors, they are apt to grow, and when of large size they are very likely to degenerate and to cause the death of the patient; unlike ovarian tumors, they are peculiarly apt to injure the health and exhaust the vitality of the patient by repeated and protracted hemorrhage, and they are liable to slough and to suppurate. In a considerable proportion of cases the myomatous uterus becomes affected with malignant disease. The tumor is liable to cause dangerous symptoms or fatal consequences by pressure on the ureters or on the intestine. If, therefore, there were any such certainty or probability of the continued growth of fibroid tumors that there is of the increase of ovarian tumors, the rules which are applicable to the latter class would at once govern our practice in regard to the former; the immediate removal of uterine fibroids as soon as discovered would be the rule. But here is precisely the difference between the two classes of tumors. Many women have fibroids which are small, which do not grow, and which cause no symptoms. In many others the tumor slowly increases during the years of functional activity of the uterus, but ceases to grow (or even diminishes) after the menopause. It is, therefore, obviously not necessary to operate on every tumor of this kind; and the establishment of the indications for surgical interference becomes in the highest a matter of individual judgment

¹ Read before the Obstetrical Section of the Suffolk District Medical Society, November 24, 1893.

² A full report of Burnham's 338 cases was published by his grandson, Dr. H. P. Perkins, Jr., in the *Annals of Gynecology*, May, 1888, vol. i, page 339.

and experience, to be determined by the nature of each separate case. Wherever there is a chance for difference of opinion, it is safe to assume that doctors, like other people, will disagree; but the more opinion can be founded on sound pathological knowledge and on the records of wide observation, and the more questions in dispute are illuminated by experience and elucidated by discussion, the nearer shall we approach to a consensus of opinion and to the establishment of definite rules of practice. In nothing is this more evident than in the treatment of fibroid tumors, and in no department of surgery is professional opinion crystallizing more rapidly into definite rules of procedure, based on accurate knowledge.

The latest aspects of this question are not as yet presented in the text-books, but are earnestly discussed in medical societies and medical journals in this and in other countries. Particularly, at the last two meetings of the American Gynecological Society and at the Pan-American Congress a great deal of attention was devoted to the subject of uterine fibroids; and while there are numerous individual differences of opinions, yet it is plain that those most interested in the subject, and whose opinion is based on the widest experience, have modified their views greatly within the last few years and are now approaching unanimity of opinion.

In the first place, it is practically conceded that electricity is powerless to prevent the growth of fibroid tumors; and it has been abandoned by many very competent men who, a few years ago, were adopting the new treatment with enthusiasm. It will, in many cases, arrest and control hæmorrhage; in many others it will allay pain and nervous symptoms; in not a few, however, it will set up very serious suppuration, or cause peritonitis of various grades, leaving adhesions which afterwards seriously complicate any operation which may become necessary.

It is substantially agreed that tumors, even of moderate size, require operation if they are growing, if they cause hæmorrhage, if they occasion pain or pressure symptoms, or if they are complicated by salpingitis. There is some difference of opinion as to the size which a tumor should have obtained to warrant removal. One would operate on growths as large as the fist, another on nothing smaller than a coconut, but none would countenance waiting until the tumor was larger than the adult head as was so frequently done only a few years ago, and as is still advised by some conservative, but ill-informed practitioners. It is agreed that the dangers of operation increase in direct proportion to the size of the tumor, the age of the patient, the reduction of vitality caused by repeated hæmorrhage and disturbance of the nutrition; that the fatal cases are usually the neglected ones; that the difficulties of operation and consequent dangers are enormously increased by the presence of adhesions, by the complications of salpingitis, of pyo-salpinx, or of cystic or purulent degeneration of the ovaries; that incarcerated tumors may press on the ureters and bladder, while large ones drag these organs out of place, often leading to serious and fatal disease of the kidneys; that a very large proportion of tumors commence to grow or continue to grow after the menopause; that even a larger proportion of those which, having arrived at large size at the time of the menopause, then cease to grow, do not diminish but degenerate, becoming soft and decomposed, and by slough-

ing or septic absorption lead to the death of the patient or to an operation *in extremis*. It is agreed that an operation for removal of an ordinary fibroid of the uterus by a competent surgeon upon a healthy patient is not much more dangerous, if at all, than is the removal of an ovarian cyst, and that all improvements of technique tend to reduce the danger of operative interference in uterine tumors to such an extent that they are more and more coming under the rules which are applied to ovarian tumors.

Another consideration is worthy of mention here, namely, that the diagnosis of pelvic growths is frequently so obscure; and the examinations on which it is based are even more frequently so insufficient that growths are often called fibroids which really belong to other and more dangerous categories. I have seen not a few cases where supposed fibroids of the uterus were really cases of cancer of the ovary, cancer of the uterus, solid ovarian tumor, pyo-salpinx with induration of the pelvic roof, impacted dermoid cysts, etc. Other surgeons have had similar experiences. The chances of operation have been lost or the results of surgical interference unduly jeopardized in these cases by well-meant delay based on the supposition that the growth was a fibroid of the uterus and therefore required no operation.

Having now noticed at some length the indications for operation in fibroids of the uterus, we may consider the different operations proposed for their relief or their removal. Those which have received any extended trial are:

- (1) Removal of the uterine appendages (Hegar, Tait).
- (2) Tying uterine arteries from vagina (Franklin Martin).
- (3) Myomectomy or removal of the tumor, leaving the uterus intact.
- (4) Removal of submucous fibroids through the os uteri and vagina.
- (5) Vaginal hysterectomy.
- (6) Supra-vaginal hysterectomy: *a*, stump fixed in abdominal wound; *b*, stump fixed just below abdominal wound, but outside of abdominal cavity (Kelly); *c*, stump turned forward into vagina (Byford); *d*, stump intra-peritoneal (Schroeder); *e*, modified by Martin, Zweifel, etc.; *f*, stump extra-intra-peritoneal, the arteries being tied in broad ligament and the stump covered by peritoneum (Eastman, Chrobak, Dudley, Goffe, Baer).
- (7) Total extirpation: a combined operation, tumor from above and cervix from below, with clamps below (M. D. Jones); with ligatures (A. Martin, Boldt). Total abdominal extirpation (A. Martin, L. Stimson, Krug, Polk and others).

The time at our disposal this evening will not suffice for the discussion of the technique of these various forms of operation; and probably such a treatment of the subject would not be of general interest. As may naturally be supposed, opinions are somewhat divided as to the choice of methods and as to certain details of operation and procedures which on the whole are essentially similar. Nevertheless, I believe it will be of interest to point out the indications which would govern me in selecting one method or another, omitting here historical details and questions to priority or invention.

(1) As to the removal of uterine appendages. This operation, introduced by Hegar and Tait, and resting

very largely on the authority of these names, and especially on the strong recommendation of Tait, gives excellent results in the case of small tumors where the principal difficulty is monthly hæmorrhage. Few operators, however, at present are willing to trust to it where the tumors are large and rapidly growing. It is hard to see how the artificial induction of the menopause will do more than the natural change of life; and this, as stated above, notoriously does not control the continual growth of tumors which are large and show a tendency to increase rapidly. Even Tait does not claim that it is of any use in cases of solitary soft myoma or in fibro-cystic tumors.

In the light of facts recently placed in evidence concerning Tait, his statistics have far less weight with the surgical world than was the case a year or two ago. The chief objections to this method, when the tumor is large, are, first, the possibility of degeneration of the growth, and, secondly, the difficulty of employing drainage. My own experience with this method has been very satisfactory. I have used it a good many times for small tumors, but only once for one larger than a coconut, which was firmly bound in the pelvis. This case died; and I have always been sorry that I did not perform a hysterectomy, inasmuch as I could not use drainage when the tumor was in the pelvis. In all the other cases menstruation ceased entirely, and the growth diminished or gave no further trouble. Other surgeons, however, report cases where the tumors continue to grow in spite of this operation, necessitating subsequent hysterectomy. The chief indication for the choice of this operation is the fact that the tumor is growing in the fold of the broad ligament, leaving the appendage readily accessible.

(2) As for tying the uterine arteries from the vagina hoping thereby to check the growth of the tumor, this is an operation recently suggested by Martin, of Chicago, but I have no personal experience of it. As the procedure is easy and safe, it seems not unphilosophical to try it in cases where the tumor is not so large that there would be danger of its degenerating or sloughing from the sudden cutting off of most of its blood-supply.

(3) Myomectomy, or removal of the tumor, leaving the uterus intact, may be a very simple or a very formidable operation, according to whether the growth is pediculated or is imbedded in the wall of the uterus and inclosed by a capsule consisting of uterine tissues. In the first case it is a safe and quick operation to constrict a pedicle and fasten it with pins in the angle of the abdominal wound. It is not so easy to treat the pedicle intra-peritoneally. As is the case in ovarian tumors, if the growth is cut away, the stump of the pedicle retracts, the vessels are hard to isolate and secure, the wound in the uterus gapes, and stitches used to close it are apt to bleed. The best method of intra-peritoneal treatment is to reflect the peritoneum from the pedicle, commencing at the lower part of the tumor, then to sew through the pedicle the shoemaker's stitch of catgut before cutting it, tightening and tying the ligature as the tumor is cut away, and covering the stump with reflected peritoneum.

The removal of large myomatous nodules from the uterus has been principally practised and recommended by Martin of Berlin, and is fully described in his work. It is not often that suitable cases occur for this operation, since usually the large nodule is accompanied by smaller ones; and where it does not seem that the pa-

tient will be cured by the removal of the uterine appendages, surgeons perform hysterectomy rather than to make and then close considerable cavities in tissues as retractile and vascular as are those of the uterus. The singular celerity and dexterity of Martin enables him to obtain results which are satisfactory, while those less gifted would not succeed as well.

(4) I shall say little concerning the removal of submucous fibroids through the os uteri. There is little new in this question, except that the ecraseur and the wire loop have fallen into innocuous desuetude, being replaced by simpler and more surgical methods of cutting and tying the pedicle, if there is any. While sublimate irrigation and packing with iodoform gauze have diminished the dangers of sepsis from cavities left in the uterine wall by the enucleation of submucous nodules, the difficult and hazardous operations which were formerly performed for the removal of large submucous growths have mostly been supplanted by hysterectomy. My experience would lead me to believe, however, that where a fibroid tumor of the uterus in the abdomen is complicated by the presence of a sloughing fibrous polyp which has been extruded from the uterus, it is the safest to remove the polyp first by vaginal operation, leaving the hysterectomy to be performed at a later date when the cavity of the uterus is free from infection.

(5) Vaginal hysterectomy offers an easy and safe way of treating cases where the uterus is of moderate size and where there is much hæmorrhage which is not easily relieved by curetting. It may also become an operation of necessity, when in attempting to remove a submucous growth, the uterus is perforated. Vaginal hysterectomy may fairly be considered as a rival of the removal of the appendages, as in suitable cases it is just as easy, is fully as safe, and because the uterus is of no use after the removal of the appendages, but may be very annoying to the patient, since it is heavy and is apt to become retroverted.

(6) A discussion of the various methods and modifications of supra-vaginal hysterectomy would alone form a voluminous paper. Of the two great varieties into which it is divided, the extra-peritoneal treatment of the stump by fixing it in the angle of the abdominal wound has been popular, and on the whole has given the best results of any method devised. Keith, Bantock, Tait, in England, and in this country Price and his followers, use a wire loop to constrict the pedicle, which is tightened by a small ecraseur or *serre-nœud*. The Continental operators, and some in this country, prefer the use of an India-rubber constrictor made of an ordinary piece of tubing; and if this is properly used, it is in my judgment far superior to the wire loop. The principal point to be observed is that it should pass twice around the pedicle, above one pin and below the other; in this way it can be made to lie on the skin instead of being buried in the wound. If the pedicle is properly made, it is slender; by exposure to the air it becomes entirely dry, does not slough nor smell badly, and when properly adjusted the dressings need not be touched at all until about the tenth day, when the constrictor and the stump are removed together. The other points to be observed are infinite care in cleansing the vesico-uterine fold of the peritoneum, the accurate coaptation of the abdominal peritoneum around the stump and below the constrictor, and the use of the glass drainage-tube in all complicated cases. The tube should be separated from the stump by two

or three stitches, that is, by an interval of about three-quarters of an inch, and can be removed as usual on the second day without interfering at all with the stump. With these precautions the objections to this treatment, which have been the principal cause of the introduction of other methods, are not well founded. There is no need of having a bulky pedicle or a sloughing stump or a large opening predisposing to hernia. Contrary to the general opinion on the subject, it requires a higher degree of real surgical skill, care and perfection of technique to treat the pedicle in this way properly than to remove the uterus entirely; but the saving of time, of shock, of hæmorrhage and exposure of the intestines, which can be obtained by this method, must weigh strongly in its favor as against the more recent methods of operation which have lately come in fashion and which are considered more ideal. The method has served me well in all sorts of difficult cases—in big tumors, in adherent tumors and in tumors complicated by pyo-salpinx, and even where there was perforation of the intestine; and I know that in feeling that it should not be abandoned lightly in favor of other methods, I have the full support of Bantock, of Price, and of many other operators, whose excellent results entitle their opinions to the utmost consideration.

In spite of the good results obtained by the extra-peritoneal method of treating the stump, some operators have always insisted that this was not the best procedure that could be devised, but that like the corresponding treatment of the pedicle in ovariectomy, it was merely a temporary method and a halting-place in the march of progress towards an ideal method. First, Schröder, and then Martin, of Berlin, were the great maintainers of this theory; and their method, as is well known, consisted in making the stump with an anterior and posterior flap which were brought together by silk or catgut sutures. Unfortunately, owing to the treacherous nature of uterine tissue, the stumps would slough if tied too tightly, while if tied less firmly they would ooze or bleed; so that the results would not compare with less ideal but more practical methods. Zweifel has now so modified this method by an interlocking stitch of silk in the broad ligament and of catgut across the cervix, that he has obtained admirable results; while Martin has abandoned it in favor of total abdominal extirpation. The intra-peritoneal method of Schröder has, however, also been modified in this country in such a manner that the uterine arteries are tied in the broad ligament outside (but near) the uterus, when the cervix is cut away low down, and is then either dilated, burned or drained after the method of Eastman, which has been followed by Chrobak and others on the Continent, or is simply left untouched according to the method of Baer; in either case the peritoneum is united above the stump. The only difficulty with this operation is that there is a tendency to suppuration below the peritoneum; and if much of the stump is left, it is very apt to slough, owing to the entire deprivation of nutrition of the part. This not unnaturally leads to the conclusion, that where the uterine arteries were so securely ligated as to make the stump liable to slough, it was best to remove it *in toto*; and this method has been adopted with great enthusiasm by Martin in Germany, and by L. Stimson, Krug, Polk, Boldt, Edebohl and others in this country. As one step in arriving at this operation, the body of the uterus was removed from above and the cervix from

below, as in vaginal hysterectomy, but with the introduction of the Trendelenberg posture it is so easy to remove the whole from above, that it is now usually done in that way. Martin attaches the vagina to the peritoneum all around with catgut sutures, the ends of all of which are brought out through the vagina. Stimson and Polk use simply four sutures, one each in front and behind and one on each side, the ends of these are brought out from the vagina and the space between is occupied with a packing of iodoform gauze. Polk and Mann strongly recommend the additional use of a glass drainage-tube in the abdominal wound. Other operators close the vagina with catgut and unite the peritoneum above it with a sero-serous continuous catgut suture. Many consider a glass drainage-tube desirable in all these cases, although not all consider it essential.

This, then, at last would seem to be the ideal operation for the removal of fibroids, the only objections being the time required and the resultant shock. The abdomen is widely open for from one to two hours, according to the dexterity of the operator and the character of the case; this is a very serious consideration, and without desiring to depreciate the march of progress toward the ideal, I will say that this operation is not one for beginners, but for dexterous, experienced and skilled surgeons.

A *résumé* of my experience may prove interesting. From January 1, 1890, to November, 1893, I performed hysterectomy for fibroid tumors of the uterus 33 times at the Charity Club Hospital; and from June 25, 1892, to November 1, 1893, I performed the same operation 14 times in my private sanitarium, and three times in private houses, making a total of 50 cases, of which I have accurate records, with 10 deaths, or 20 per cent. Of these cases there were: extra-peritoneal stump, 29, with 4 deaths, or 13.7 per cent.; extra-intra-peritoneal stump, 18, with 4 deaths, 22.2 per cent.; abdominal total extirpation, 3, with 2 deaths, or 66.6 per cent. Besides these, I have had one case of vaginal hysterectomy for fibroids, which recovered; two cases where the operation was primarily to remove large, sloughing, fibroid tumors which had been extruded through the uterus, and in which it seemed at the time best to remove also the body of the uterus from which the growth originated, and which was the seat of other myomatous nodules. Both of these cases died: one on the second day, from uræmia caused by long pressure of the tumor on the ureters and secondary disease of the kidneys; the other sank on the third day after operation, without rise of temperature, dying apparently from cardiac failure due to repeated hæmorrhages, septic absorption before the operation, and the shock of the delivery of the tumor, which, when I first saw the patient, was hanging between her thighs, larger than a child's head, and extremely offensive. During the same period I have removed the uterine appendages some ten times for small uterine fibroids, often combining the operation with ventro-fixation of the uterus. All of these cases recovered, except one who died of chronic sepsis four weeks after the operation. Besides these cases I have had a number of ordinary fibroid polyps, which were removed without difficulty; but I have not taken the trouble to look up the exact number.

Now, in considering the results obtained by the different methods of operation, it is necessary to examine the causes of death in those cases of each class which

ended fatally, in order to discover which operation offers the best chance of recovery, and which is best adapted for any particular class of cases. And first, as to the four deaths which occurred in 29 cases where the stump was treated extra-peritoneally. Three of these occurred at the Charity Club Hospital, and two came close together, and were accompanied by three other deaths from sepsis following particularly simple operations. I think that all these deaths were due to the poisoning of the house by one of the cases of sloughing fibroid above referred to, although they occurred some time after the death of that patient; it seemed impossible to get good results, and I was compelled for a time to suspend abdominal work in that place. It was on the presentation of these facts to the management of the Charity Club that it was decided to build a new building adapted to the serious work which had to be performed there. I am happy to say that the new hospital gives such facilities as can never be obtained in an old dwelling-house used as a hospital, and that there is but little danger of an occurrence of an epidemic of sepsis within its walls. This leaves two deaths to be accounted for among the 29 cases where the stump was treated extra-peritoneally; of these, one occurred at the Charity Club Hospital after the removal of a very large tumor from a woman considerably passed the menopause. The other case was at my sanitarium, in a patient who had a large myoma complicated by pregnancy, requiring a Porro operation; in each case the death was due to obstruction of the bowels. The occurrence of these two deaths set me to reflecting on Keith's remarks concerning the tension of the broad ligament which is occasioned by the traction of the stump when treated extra-peritoneally, and led me to try the intra-extra-peritoneal treatment which was so warmly advocated by Eastman, Chrobak, Baer and others.

Eighteen cases treated by the latter method gave four deaths, or a mortality of 22.2 per cent.; these deaths all came near together, and were particularly painful to me because three of them occurred in patients where there were no particular complications, where the tumors were not inordinately large, and where the operation could have been performed by the extra-peritoneal method with excellent prospects of success.

These four deaths occurred after a series of 13 consecutive recoveries by the intra-extra-peritoneal method, and just when I was flattering myself that I could remove fibroids without fatal results. Besides the cases that died, one other had a considerable discharge of pus from the vagina, no doubt coming from the cervix uteri. The study of these cases revealed one important point in all of the first ten, that is, in nearly all of those who recovered, so much of the uterus was removed that very little of the cervix was left; this was widely dilated, the canal thoroughly burned with the thermo-cautery, and occupied by a twist of iodoform gauze providing free drainage for the space left below the peritoneum and leaving very little of the cervical tissue to be nourished indirectly by anastomosis. In all of the cases that died the dilating and burning of the cervix was omitted; and although gauze was drawn through the undilated cervix from above downward, it is probable that drainage was not sufficient. Probably, too much cervical tissue was left to be properly nourished after the ligation of the uterine arteries. We are thus met with the same difficulty as in Schröder's operation where a cervical stump is left; if the blood-

supply is entirely checked, it sloughs, otherwise it bleeds. One of these cases was of a nature that probably could not have been saved as the tumor had degenerated; the patient was some fifty-four years old, and she had suffered from a series of very severe chills, fever and profuse sweats at intervals of two or three days for three months before she came into my hands. Her physician, Dr. Thurlow, had recognized the nature of the trouble and insisted on the necessity of operation, but the patient obstinately maintained that she had chills and fever, and would not consent to surgical interference until she was evidently failing. The tumor was removed without accident, but the patient showed symptoms of shock while on the table, and did badly from the first. She had a severe chill and sweat the day after the operation, had almost complete suppression of the urine, and died on the fourth day. The tumor weighed over seventeen pounds, and contained over a quart of pus and much broken-down tissue. At the autopsy there was a little purulent-looking fluid on the stump; no signs of general peritonitis. There was multiple abscess in one of the kidneys. Neither of the ureters had been included by the ligatures. Leaving this case out of consideration, I have ten cases of the Eastman-Chrobak operation where the cervical stump was short and was dilated, burned and drained; all of these recovered. There were six cases which were meant to be done by Baer's method, without dilating or burning the stump; and three of these died, besides the hopeless case above reported.

The results of the latter cases, which occurred last summer, lead me to try total abdominal extirpation, in order to get rid of the stump entirely, as advised by so many advanced operators of the day; although I have tried this three times, and lost two cases, yet here again the studies of the causes of the deaths show how misleading are percentages which give only the mortality, without describing the cases.

The first patient had cardiac disease, with compensatory hypertrophy of the heart. She had a large fibroid, which was growing rapidly in a young woman under thirty years of age, and occasioned very profuse and exhausting hæmorrhages, leaving the patient in a deplorable state. She entered the Charity Club Hospital last summer, and insisted on operation in such a way that I could not refuse it, although the extra risk was pointed out to her. The tumor rose high in the abdomen and was freely movable, and it seemed probable that it could be removed in a few minutes with extra-peritoneal treatment of the stump. On opening the abdomen, however, it was found that the tumor had lifted up the broad ligament on each side, and that to make a stump it must be widely separated from its investment of peritoneum. When this was done, the stump was so small that it was a very little matter to remove it entirely. The patient, however, did not react well. She suffered no pain whatever, but was ominously quiet, with a slightly subnormal temperature, and died on the third night, her temperature rising that very evening.

The next case was an ordinary one and recovered without any trouble whatever.

The last case was in a middle-aged woman who had carried a small fibroid tumor for several years, and until past the menopause; during the seven months preceding operation, it had begun to grow very rapidly, so that the specimen, which I showed at the last meet-

ing of the Suffolk District Society, weighed some twenty-five pounds. The tumor was firmly adherent to the abdominal wall and to the omentum, obtaining nourishment chiefly from the latter through a multitude of vessels of which the veins were dilated and looked like bunches of earth-worms. The ovaries were cystic, and with the tubes were firmly bound down to the pelvis. From the rapid growth I feared that the tumor was sarcomatous, and thought the safest way was to remove all. The patient never rallied well from the long operation, never got fairly warm in her hands and feet, although everything possible was done for her; and she died septic on the third day.

The conclusions of my own experience briefly summed up are as follows:

(1) That electricity is useless and dangerous, and has no place in the armamentarium of the surgeon.

(2) That no method will compare with that of extra-peritoneal treatment of the stump in favorable cases, that is, where the abdominal walls are not too thick and the tumor can be lifted out so that a constrictor can be applied around the whole pedicle, including the uterine appendages; that the advantages of this method lie in its rapidity, in the short time during which the abdomen is open, in the entire protection of the intestines from exposure and from handling, and in absence of shock; that with proper care there need be no sloughing of the stump, and little or no suppuration of the wound. I show here two stumps, each removed on the tenth day, with the ligature still in position; they are perfectly dry, hard and inoffensive. This, then, for me is the operation of election for the present, especially in private practice and in all cases where patient is not strong and is ill prepared to withstand the shock of the longer operation required by other methods of treatment of the stump.

(3) For the intra-extra-peritoneal treatment, I should always in future leave as little of the cervix as possible, dilate it, burn it and drain it. This method is applicable to cases in which it is difficult to apply the former one, owing to thickness of the abdominal walls or the rigidity of the pelvic floor, or the presence of dense adhesions requiring drainage. I see little advantage to be gained from leaving any cervix. To avoid the great danger of sloughing of the stump, it must be amputated well below the level of the internal os, after separation of the bladder from the cervix and ligation of the uterine arteries. When all this has been done, there is no difficulty or loss of time in removing all the uterine tissues. Drainage should usually be employed, both through the vagina by gauze and by a glass tube at the bottom of the pelvis, as there is pretty sure to be free oozing.

The fact remains, however, and must never be forgotten, that for either of these methods of operation, by intra-extra-peritoneal treatment or by total abdominal extirpation, the operation is prolonged from half an hour to an hour. During this time the pelvis is exposed to the air and to much handling; considerable blood may be lost, which runs in among the intestines; there is an added shock from the large amount of ether consumed; and the whole burden of proof is, in my judgment, still on those who would use these operations in cases in which the extra-peritoneal treatment can easily and quickly be performed.

ACCORDING to Dr. Squibb, American chloroform is on the whole purer than that used in Europe.

TWELVE CONSECUTIVE AND SUCCESSFUL OPERATIONS FOR APPENDICITIS.

BY JOHN W. KEEFE, M.D., PROVIDENCE, R. I.,
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the Rhode Island Hospital.

(Concluded from No. 12, page 284.)

CASE VII. M. O'G., male. Age thirty, weaver. First case operated upon in Rhode Island between the attacks.

Admitted to St. Joseph's Hospital May 7, 1893. Family history good. No evidence of transmitted disease; good moral habits. He has since infancy been delicate, although he has had no serious illness until August, when he was taken with pain while at work; pains at first general abdominal, later becoming localized in the right iliac region. He has had attacks since, on an average, every two weeks. Some attacks lasted ten days, while others but one or two days. He was obliged to remain from work so often that he finally had to give up his position in the factory. He had a cyanosed and anxious expression of countenance, weak pulse and poor general appearance. There was pain on deep pressure over McBurney's point.

May 9th. Patient's abdomen made aseptic previous night, and bowels evacuated. Ether breakfast.

Operation. Patient etherized. Present, Drs. Collins, Day, Mitchell, Noyes, Black, Mahoney, Barry and O'Neil. Abdomen scrubbed again with soap and water, ether and corrosive-sublimate solution. Sterilized towels about the field of operation. Instruments sterilized by steam. An incision three inches long was made, a little to the right of and parallel with the border of the rectus muscle, through the abdominal wall. After considerable search the appendix was found, very much enlarged and bound down by firm adhesions to the inner and posterior aspect of the cæcum. Following the longitudinal muscular fibres of the cæcum materially aided in finding the base of the appendix. The adhesions were so firm that I removed three-quarters of an inch of the appendix, thinking that was all there was left of it; but with the finger I was able to break up the adhesions between the appendix and cæcum, disclosing one and one-half inches of appendix still remaining. A catgut ligature was tied around the base of the appendix, and allowed to remain; the appendix was severed with scissors, and a Paquelin cautery used to sear the end of the stump. While searching for the appendix several mesenteric glands were noticed having the appearance of tubercular infiltration. All of the coats of the appendix were thickened. The abdominal cavity was flushed with boiled water and spoused dry. A catgut continuous suture was used to approximate the peritoneum, and four silver-wire sutures through the entire abdominal wall. Silkworm-gut sutures through skin completed the operation. An iodoform dressing was applied. Patient made a good recovery from the operation. Patient rested well during the night. Treatment consisted in giving a drachm of hot water every fifteen minutes.

May 10th. Temperature, morning, 101°, pulse 103; evening, 102.5°, pulse 104. No nausea. Patient of a nervous temperament, discontented, and worries a great deal. He has a cough, with slight expectoration.

May 11th. Temperature, A. M., 101°; P. M., 102°. Peptonized milk, one drachm every fifteen minutes. Pulse strong.

May 13th. Patient slept but little, exceedingly nervous and fretful.

May 15th. Bowels evacuated by rectal injection of a few drachms of warm glycerine.

May 17th. Temperature normal at noon. Coughs a great deal, and expectorates considerable thick mucus.

May 18th. Dressings removed for first time since the operation. Union perfect. No tympanites or pain on pressure, as before operation. The four silver-wire sutures were removed. Another aseptic dressing applied. Diarrhœa in afternoon, controlled by bismuth and opium.

May 23d. Silkworm-gut sutures removed. Firm union present. Flexible collodion painted on wound, and an abdominal binder applied. Forcible pressure in the right iliac region now gives no pain, and all symptoms which he complained of before the operation have disappeared.

May 25th. Temperature, *p. m.*, 103°. Delirious at night. General weakness.

May 28th. Examination of chest shows dulness at both apices and increase in vocal resonance. Sputum examined, and found to contain tubercle bacilli.

May 31st. Diarrhœa. Temperature 103.5°, pulse 130. Patient takes considerable nourishment.

June 5th. Still weak, cough and expectoration. Appetite improving.

June 6th. Discharged at own request.

September 6th. Patient has improved a great deal. Is able to go about out-of-doors, but still has a cough, and expectorates a thick, yellowish mucus. Has had no trouble, since the operation, in the right iliac region.

CASE VIII. E. M., male. Age seven and one-half years.

This boy I saw in consultation with Dr. Payan on the ninth day of last August. He gave a history of having injured his right side while playing with another boy some weeks previously. Dr. Payan saw him for the first time August 2d, when his temperature was 103°, pulse 120. Pain referred to right knee.

August 3d. Pain in right lumbar region.

August 8th. Temperature and pulse elevated. Slight nausea last few days. No vomiting at any time. Bowels regular. Chills and sweats for last four days. Dulness over right lumbar region, and sense of resistance. Dr. Payan introduced a needle, but did not detect pus. Poultices locally and anodynes.

August 10th. At 10 *a. m.*, the boy was restless and hypersensitive. Temperature 100°, pulse 110. Anxious expression. Right thigh flexed. On inspection of abdomen, a fulness was seen in right loin. Sense of resistance. Pain and dulness on percussion over this prominence. Pressure over McBurney's point produced pain, which was referred to right loin. Operation advised.

At 4.30 *p. m.* an operation was performed. Dr. Payan etherized the patient, and I made an incision, one inch above and parallel with the crest of the ileum, two inches long, cutting through the skin, muscles, fascia and peritoneum, into an abscess cavity which extended from the region of the right kidney to the iliac fossa. Intestines formed the inner wall of the abscess cavity. The appendix was not found. About six ounces of very fetid pus escaped. A second opening was made in the right iliac region by cutting down upon a

finger introduced into the abscess cavity through the original wound, and a rubber drainage-tube passed through both openings. The cavity was sponged out with a solution of corrosive sublimate (1 to 2,000), and an antiseptic dressing applied. The patient's recovery has been uneventful; the wounds are entirely healed.

September 6th. Boy attends school; no trouble from wound.

CASE IX. W. S., male. Age forty-two, grocer.

Admitted to St. Joseph's Hospital August 13, 1893. Father died of phthisis; he, however, was the only one of his family to have the disease. Mother's family noted for longevity. Until within two years patient was an exceptionally healthy man, weighing 200 pounds. He has gradually failed, until at the present time his weight is only 130 pounds. Last January patient had a severe intestinal hæmorrhage, the cause of which was diagnosed by his attending physician as duodenal ulcer. He then gained in health and strength until two weeks ago, when he was seized with severe pain in the right iliac region. Four days later he could feel a swelling in same location. Pain on walking or stooping or pressing over swelling. A surgeon was called, who accompanied him to Boston, where an eminent surgeon of that city was consulted. A second consultation of surgeons from Providence and Boston was held at patient's home on August 11th, and an unfavorable prognosis given the patient's family. No operation advised.

August 14th. I saw patient for the first time. Temperature 100°, pulse weak; sweats; anxious countenance. Inspection showed slight prominence in right iliac region. Circumscribed area of dulness, with sense of resistance about five inches in diameter just below and to the right of the umbilicus. No fluctuation could be detected. Diagnosis, appendicitis with circumscribed intra-peritoneal abscess. Operation advised.

August 15th. Operation. Present, Drs. Collins, McCusker, O'Neil and Barry. Patient etherized. Field of operation rendered aseptic. An incision about three inches in length was made over the most prominent portion of the tumor, and parallel with the median line, through the abdominal wall, and into an abscess cavity walled off by firm adhesions to the parietal peritoneum. About six ounces of greenish pus was evacuated. The abscess was irrigated with a corrosive-sublimate solution (1 to 10,000), and two silkworm-gut sutures introduced to close the angles of the wound. A rubber drainage-tube was passed into the abscess cavity, and an iodoform dressing applied. Patient rallied well from the operation. Warm peptonized milk and whiskey given in small doses. At night patient complained of abdominal pain, unrelieved by morphia. An enema of soap-suds and turpentine produced a discharge of fecal matter and a large quantity of gas with great relief.

August 16th. More abdominal pain, relieved by enema. Wound dressed, considerable discharge. Evening temperature 100°, pulse 120.

August 17th. Patient's general condition improved. Drainage-tube removed. Temperature normal.

August 19th. Patient sleeps and takes nourishment well. Diet: milk, egg-nog and beef-tea. Wound looking well. Slight discharge.

August 24th. Wound dressed every second day. Sutures removed.

August 27th. Edges of wound brought in apposition with strips of adhesive plaster.

August 29th. Notwithstanding the patient has strict orders not to leave his bed, he went out twice to the closet.

September 2d. Two silkworm-gut sutures were introduced to bring granulating edges of the wound in apposition, and antiseptic dressing applied.

September 4th. Wound nearly healed. Area of dulness has disappeared, with the exception of a slight amount of dulness in close proximity to the incision. Patient eats, sleeps and looks well. Says he feels as well as he ever did in his life.

October 1st. Patient has gained in weight. No pain in right iliac region.

CASE X. D. C., male. Age fourteen years, messenger boy.

Patient has been strong and robust until the present illness. He is an exceptionally well-developed boy. On August 13, 1893, after playing base-ball, he was seized with pain in the right side of the abdomen. On the following day the pain increased, and he was obliged to remain in bed. The family physician was called. Diagnosed the disease as appendicitis, and ordered anodynes and ice applied locally. He obtained considerable relief, and the case looked like one that would terminate by resolution. I saw the patient for the first time August 21st. His temperature was 100°, pulse 130. Abdomen distended and tympanitic on percussion, except just above the crest of the right ileum where there was an area of dulness three inches in diameter, and tenderness on pressure. Deep pressure over McBurney's point produced pain in area of dulness. The boy's general appearance was poor, and his anxious expression denoted serious trouble.

August 22d. Boy admitted to St. Joseph's Hospital. No marked change in symptoms.

August 23d. Tympanites has disappeared. Temperature 100°, pulse 98. Area of dulness, and pain on pressure above crest of right ileum. No sense of resistance. No fluctuation; mass could be detected on palpation. Assisted by Drs. Day, O'Neil and Barry, I operated by making an incision three inches long in the right lumbar region, commencing just above highest point of the crest of the right ileum and continuing toward the ribs; the incision being parallel with the median line. The several layers of the abdominal wall, namely, integument, superficial and deep fascia, the external and internal oblique muscles, transversalis muscle and transversalis fascia, subserous areolar tissue and peritoneum, were all readily recognized and divided with the knife. There was no cedematous condition of these tissues, such as is commonly found in this disease. Owing to the thickness of the abdominal wall, fluctuation could not be detected, even when the peritoneum was reached. About five ounces of greenish and fetid pus was evacuated. Coils of intestine could readily be felt forming the inner wall of the abscess cavity. Appendix was not found. The cavity extended from the lower border of the right kidney to the cæcum. The abscess cavity was irrigated with boiled water, a rubber drainage-tube inserted, and an iodoform dressing applied.

August 24th. Patient slept well last night. Warm peptonized milk in small doses. Wound dressed. Considerable discharge in dressing.

August 25th. Dressed. Tube cleansed, reinserted. Enema produced copious evacuation from bowels.

August 27th. Diet, milk and gruel. Wound dressed every day. Discharge is decreasing and cavity becoming smaller.

August 31st. Tube removed. Wound looks well.

September 6th. Patient eats and sleeps well. General appearance good. Wound gradually closing.

October 1st. Wound entirely healed.

January 1, 1894. Patient in good health. No return of disease.

CASE XI. A. C., male. Twenty years of age, single, carpenter.

Admitted to St. Joseph's Hospital September 9, 1893. Good family history. Three years ago patient had an attack of diarrhoea and vomiting, with severe abdominal pain, most intense in the right iliac region. He recovered in a few days, and has had two attacks since, the last occurring last summer. His temperature then ranged from 100° to 102°. Pain severe, localized in right iliac region. Vomiting and constipation were also accompanying symptoms. His temperature on admission to the hospital was 99°, and he complained of pain on firm pressure over McBurney's point. No mass or sense of resistance could be felt. Removal of appendix advised.

September 13th. Operation, under ether. Asepsis aimed at in preparations. An incision three inches in length was made, parallel with the median line, the centre of the incision being over McBurney's point. The abdominal cavity was opened, and the appendix was found bound down by slight adhesions behind and to the left of the cæcum. It was three-quarters of an inch thick and two and one-half inches in length. Coats thickened. The appendix was excised about three-sixteenths of an inch from the cæcum. The mucous and muscular layers of the stump were drawn outwards, and a ligature of fine sterilized silk placed about them. The peritoneal coat of the appendix was now drawn over the ligatured mucous and muscular coats, and united by three fine silk, Lembert sutures. Four silver-wire sutures through abdominal walls, and several silkworm-gut sutures through skin and superficial muscles closed the abdominal wound. No drainage. An aseptic dressing applied. Patient had a comfortable night. Scarcely any pain. He took only drachm doses of hot water every fifteen minutes during the first twenty-four hours.

September 14th. Drachm doses of peptonized milk, alternated with hot water. No nausea at any time.

September 18th. Bowels moved for the first time since the operation by an enema.

September 22d. Silver-wire sutures removed. Primary union.

September 26th. Silkworm-gut sutures removed. Discharged from the hospital cured.

December 20th. Patient in good health.

CASE XII. E. H., male. Aged twenty-seven years, horse-car driver.

Admitted to St. Joseph's Hospital October 16, 1893. Patient's family history is good. Until one year ago he was in good health; then he was seized with severe abdominal pain, more intense on the right side, accompanied by fever. In a few days he was better, but occasionally had pain in the right iliac region, but not severe enough to prevent him from attending to his work. Last March he had a similar attack to the first seizure. Ten days ago he had more severe pain than in previous attacks, with pain localized in right iliac region. Vomiting and rise in temperature. He was

treated by ice locally and opium internally, until these symptoms subsided so that he was able to walk about for past few days. He has pain on complete extension of thigh, and greatest tenderness on pressure just below and to the right of McBurney's point. There is a small area of dulness and a sense of resistance over the same region.

October 17th. Operation, under ether, with strict asepsis. An incision three inches long, parallel with the median line, was made over the area of dulness. The various abdominal layers were incised until the peritoneum was reached, when it was found that the cæcum was adherent to the abdominal wall below the site of the incision. The wound was enlarged upwards until the abdominal cavity could be opened above the point of adhesion of cæcum to the abdominal parietes. By careful manipulation the adhesions, which were on all sides of the cæcum, were severed by the fingers, and the appendix was found by following the longitudinal fibres of the cæcum. The appendix was bound to the cæcum throughout its entire length. Its coats were thickened, and near the junction of the appendix and cæcum its cavity was obliterated and its walls gangrenous. A silk ligature was passed around the stump of the appendix and tied. Owing to the inflammatory process which had occurred, the peritoneal coat of the appendix could not be united over the remaining stump; neither could a fold of the adjacent peritoneum covering the cæcum be employed to cover the stump of the appendix, as the coating of lymph so thickened the peritoneum that it was not readily pliable. The abdominal wound was closed with thirteen silkworm-gut sutures, and an aseptic dressing applied. A drachm of hot water was given every fifteen minutes during the next twenty-four hours.

October 18th. Pain relieved by sulphate of morphia (gr. $\frac{1}{2}$), hypodermatically given. No nausea. One drachm of peptonized milk every half-hour. Patient feeling well.

October 24th. Bowels moved by enema. Temperature normal. Sleeps well. Takes plenty of milk.

October 27th. Seven of the sutures removed.

October 30th. Six other sutures removed. Highest temperature since operation 99.5°, which was on the third day. Wound has healed by primary union.

December 15th. Patient in good health.

None of the cases reported have had recurrence of the disease. Two cases developed small hernia at the seat of the cicatrix. My observations lead me to say that while some of the cases require a very simple operation, others call into action all the skill and ingenuity of an expert. I am convinced that the aspirator may be very harmful, and should never be used in cases of appendicitis. Early operation, that is, within the first forty-eight hours, by a skilful surgeon, will save the greatest number of lives.

ALUMINUM FOR SURGICAL INSTRUMENTS.—A physician who got rid of some of his steel instruments and bought others made of aluminum, says that he is sorry that he changed. The aluminum probes, sounds, tongue-depressors, and that sort of thing do not oxidize, to be sure, but he finds that they are deficient in elasticity and stay bent after pressure. He declares, moreover, that he likes to feel that he has a hold on something when he uses an instrument, and aluminum is so light that he can put no trust in it.

PATHOLOGY OF DIABETES MELLITUS.*

BY ELLIOTT P. JOSLIN A.B., PH.D.

DIABETES mellitus is now considered by many authors to be a disease of more than one type and in this paper the classification of Lancereaux¹ will be adopted. He divides the disease into three forms, (1) constitutional, (2) nervous and (3) pancreatic. The symptomatology, pathology and experimental work which has been lately done on these varieties of diabetes will be here discussed, and an account of Chauveau's recent work given.

(1) The constitutional or fatty diabetes is the common form of this disease, and is well known to you all. It is most apt to occur in middle life, and frequently comes on in successive generations of a family, and cases are on record where it has been traced through four generations. Schmidt² has traced heredity in 248 out of 600 cases of diabetes, and probably they were mostly of this variety. Obesity and gout are often precursors; and headache, epistaxis, hæmorrhoids and neuralgia are frequently prodromal symptoms. The disease begins insidiously, slowly advances, and often is accidentally discovered or brought to light by some of its characteristic complications. When discovered it rapidly yields to dietetic treatment, and after a residence at some resort like Carlsbad, the sugar may wholly disappear from the urine. It will return, however, in time, and the treatment must constantly be kept up. In these persons, the urine seldom rises above three or four litres per day, and the amount of sugar varies between 90 g. and 300 g. for the greater part of the time. This form of diabetes may have a long duration, and not greatly interfere with a man's business. Cases have lasted thirty and forty years.³ Death comes either from an intercurrent disease or from the complications.

Unfortunately the pathology of this disease is not understood, and later investigations may destroy this classification.

Experimental work has added little to our knowledge of this type of diabetes. Considerable work, however, has been done on the so-called alimentary, toxic and phloridzine glycosurias, which will now be described.

Normal urine contains a small quantity of dextrose.⁴ Experiments have been made on men and dogs to whom large amounts of sugar have been given. When 250 g. of cane-sugar were given to a man⁵ who had been previously kept on a nitrogenous diet, 0.7 per cent. of the amount appeared in the urine. In dogs⁶ the ingestion of such an enormous quantity as 500 g. caused 3 per cent. of the amount to appear. Eleven individuals⁶ underwent a rather agreeable experiment in which they partook of a supper of sweets, ices and champagne. Two to four hours later the urine of five of the party contained from 0.1 per cent. to 0.25 per cent. of sugar. Two hours later the sugar had disappeared. Another writer⁷ has found that animals which had been starved for a few days, when given small amounts of sugar experienced a transitory glycosuria. A similar lack of assimilation of sugar may explain light forms of diabetes. This is known as alimentary glycosuria.

Toxic glycosuria is due to the ingestion of various poisons, notably curare. A host of investigators have

* Read before the Boylston Medical Society of the Harvard Medical School, November 17, 1893.

found sugar in the urine after injections of curare; but an equally large number have affirmed that glycosuria was absent, providing artificial respiration was maintained. Halliburton⁷ says that the glycosuria is not present in these cases, but that the sugar reaction is due to glycuronic acid. He furthermore adds that this explains the supposed glycosuria which sometimes follows the use of morphia and chloroform. Strychnia, nitrate of uranium and many other drugs are claimed to have the power of bringing about a temporary glycosuria.

Phloridzine glycosuria has excited much interest. When phloridzine is given to an animal in the food, or subcutaneously, a glycosuria is produced. It commences about three hours after the ingestion of the glucoside, attains a maximum in twenty hours, and ceases within a day and a half. The glycosuria varies with the amount of food ingested. Various explanations of this phenomenon have been offered, but a recent series of experiments by Minkowski and von Mering throw much light on the subject. In birds glycosuria does not follow extirpation of the pancreas, but von Mering⁸ found on giving phloridzine that sugar appeared in their urine. Dogs, rendered diabetic, passed an additional amount of sugar when they were given the drug. This led Minkowski to make the following experiment.⁹ He removed the kidneys, both from a healthy dog and from a dog suffering with diabetes produced by pancreatic extirpation. To the healthy dog he gave phloridzine. After a time the blood of both animals was examined. The diabetic animal's blood contained 0.3 per cent. to 0.5 per cent. of sugar, which is from two to three times the normal quantity, while the phloridzine animal showed an abnormally small amount of sugar in the blood. He argues that if sugar is being formed in the organism, removal of the kidneys, thus preventing its excretion, will cause a storing up of it in the blood. The experiment shows that in the diabetic animal this was done, while in the phloridzine animal the sugar, far from being increased, was diminished. He, therefore, concludes that the glycosuria produced by phloridzine is due to its direct action on the kidneys.

In considering this constitutional type of diabetes, with regard to which we know so little, it is well to remember that an excessive amount of carbohydrates and some poisons may cause a temporary glycosuria, and that the kidneys under certain circumstances may allow the passage of sugar.

(2) The nervous or traumatic¹ variety of diabetes is the mildest of the three forms. It comes on after shock to the nervous system caused either by trauma or some severe mental strain, for example, worry, anxiety and the like, and runs a variable course. Polyphagia is absent, and the patient is seldom troubled with polydipsia. The urine is perhaps twice the normal amount, and though sugar is present, it is not in large quantities. There is little loss of weight. Subjected to treatment, hygienic and dietetic, the individual rapidly recovers, and the transitory glycosuria is over. Complications are rare. There is a sure tendency to recovery, and death almost never occurs unless there are extensive lesions of the central nervous system.

Pathology. — The pathology of the nervous form of diabetes has been earnestly studied and with good reason, for clinically mental disturbance appears to play a great rôle in its etiology. Packard⁹ says many railroad engineers are victims to this disease. Paige¹⁰

lays great stress on mental emotions. Madigan¹¹ has observed glycosuria alternating with insanity in a patient. Savage¹² has found diabetes and insanity alternating in families. Nagel¹³ has observed two cases of persistent glycosuria following an apoplectic attack. Dr. R. H. Fitz¹⁴ referred to the presence of glycosuria in epilepsy. Windle¹⁵ has tabulated the records of 184 brain examinations in the post-mortems of diabetic persons. In 91 instances, the brain was normal; and of the remaining 93, 23 were connected with the fourth ventricle. These lesions were of the most varying type; cerebral hæmorrhage, meningitis, tumors and congestion of the blood-vessels were all noted.

The whole subject was looked into by a committee of the London¹⁶ Pathological Society in 1882, who reported that they failed to find in the brain "any change which could be regarded as exclusively or constantly associated with diabetes."

In 58 cases of diabetes in which an examination of the spinal cord was made, 37 were found normal; and in the remainder there was no characteristic lesion.¹⁶

Experimental Work. — The experimental work of Claude Bernard, on the production of glycosuria by the puncture of the fourth ventricle, was one of his most brilliant achievements. This has been repeated many times with success. If the medulla be punctured in the region of the vaso-motor centre of a well-fed animal, sugar will appear in the urine in considerable quantity. After a few hours the sugar will have reached a maximum, and in a day or two, or even less, the sugar will be absent from the urine. If the animal has been starved previous to the experiment, little or no sugar appears. It would thus seem likely that the lesion to the fourth ventricle in some way acted on the liver so that the change of glycogen into sugar was accelerated, and the blood thus loaded with sugar emptied its excess into the urine.

The pneumogastric nerves¹⁷ run to the liver, via the solar and hepatic plexuses. Section of these nerves does not give rise to glycosuria, nor does stimulation of the peripheral end of the section. This shows that the impulse from the diabetic centre in the medulla does not travel along these nerves. On the other hand, electrical stimulation of the central end of the section produced a glycosuria analogous to that brought about by puncture of the medulla. Furthermore, it is claimed that in some cases an irritation of the branches of the tenth pair of cranial nerves in the abdomen, liver, lungs, heart, stomach and intestines may in some cases bring about a temporary appearance of sugar in the urine. This would imply that the pneumogastric exercises an inhibitory influence upon the diabetic centre of the medulla.

The liver receives another nerve-supply through the splanchnics. When these nerves are cut, no sugar appears in the urine; and if then the diabetic puncture is made, it fails. Evidently, the action of the diabetic centre on the liver is by means of the splanchnic nerves. These have been traced to the spinal cord, with more or less probability, through the gangliated cord of the sympathetic, the first dorsal ganglion, the annulus of Vieussens and the lower cervical ganglion. Probably they do not leave the cord always at the same level.

Lustig obtained a transitory glycosuria by making lesions of the solar plexus, and Lepine has produced diabetes by electrization of the nerves of the pancreas.

"Section and subsequent stimulation of the central end of the sciatic nerve causes diabetes."¹⁸

With regard to these experiments on the nervous system, I should like to call your attention to the following considerations: (1) the glycosuria has been transitory in every case; (2) the experiments are severe, and might of themselves produce such a constitutional derangement that glycosuria would result, even if there was no injury to the nerves; (3) as for an injury of the solar plexus producing glycosuria, Minkowski has shown this view to be erroneous. The work of Chauveau on nerve lesions is so recent that it will be deferred to the end of the paper.

(3) The pancreatic or thin type of diabetes is the most severe form of diabetes mellitus. In one class of cases, an individual who has been in perfect health is plunged into the midst of a severe diabetes. In other cases the symptoms come on gradually; and belching of wind, nausea, a sense of fullness and weight in the epigastrium are often the first indications of trouble. Diarrhoea is often present. In still other cases, what is supposed to be a fatty diabetes develops into the thin variety.¹⁹ When the disease is established the polyphagia, polydipsia and polyuria are extreme. The skin is harsh, dry and leathery to the touch. Emaciation quickly comes on, and there is great fatigue on exertion. The knee-reflex is usually abolished. Often the hair is lost, and the patient's teeth decay or fall out. The mental character is changed, and the unhappy individual is often in a state of mental depression. Hectic fever has been observed. The evolution of the case is characterized by its rapidity, and in the course of a period from a few months to three or four years, the patient usually succumbs to phthisis or diabetic coma. The urinary symptoms are much more severe than in either the fatty or the nervous forms. The quantity ranges between three and ten litres, and is generally between five and seven. The urea is decidedly increased and the sugar excreted per day is from 300 g. to 500 g.

Pathology.—Thomas Cowley,²⁰ in 1788, was the first to record a lesion of the pancreas in connection with diabetes mellitus. He observed an atrophy of the gland, with the presence of calculi, and suggested that it might be the cause of the disease. During intervals of forty years, more or less, Chopart²⁰ and Recklinghausen²⁰ made similar observations. But it was not until 1877 and the few following years, that the matter received much attention. Lancereaux¹ then published his two cases. In one of these the pancreas was atrophied, and much of the glandular structure was lost; in the other it was only with difficulty that the gland was found at all; but when found, calculi were discovered in the canal. Lancereaux's memoir led pathologists to study the pancreas more carefully; and, as a result, in quite a number of instances of diabetes, pancreatic lesions have been found. There would undoubtedly to-day be more recorded cases of changes in the pancreas in diabetes, were it not for the fact that the gland may look perfectly normal to the naked eye and yet on microscopical examination show marked alterations.^{20 21} Until this becomes more generally known, a diseased pancreas will be often overlooked.

What is the character of these changes? They are most varied, but the predominating characteristic is an increase in the amount of interstitial tissue. Williamson²⁰ has collected 100 cases from the literature upon

the subject; 47 showed an atrophy more or less marked, and of this number the gland was almost absent in three; in two others it was not recognized by the naked eye, and in two there was a cystic dilatation of the duct. Seventeen out of 100 were in a condition of marked fatty degeneration; and in some instances an increase of the connective-tissue, the presence of calculi or atrophy were coexistent with the main lesion. In another group of 13, the gland was transformed into a firm mass of fibrous tissue; in three of this number the lesion is stated as a marked cirrhosis. Of the remaining cases eight were cancer, six were cysts and three abscesses. There were two cases of "pancreatitis and pancreatitis hæmorrhagica," and one each of calcified, cirrhotic and cystic pancreas, while in the remaining case the occurrence of calculi was alone stated. Rokitsansky¹⁹ found the pancreas affected in 13 out of 30 cases. Saundby²¹ gives seven cases in which the pancreas was atrophied and four where it was abnormally firm and fibroid. Windle¹⁵ collected post-mortem records on the pancreas in 139 cases. In 65 of the number, the gland was normal. Lest some of his cases and those of Williamson may be identical, I will pass them by, simply stating that atrophy and fatty degeneration were the most common affections.

Are these changes in the pancreas which are found in diabetes accidental? Are they the result of the disease? Do they furnish the cause of one form of this malady?

The first question can be answered in the negative with a good deal of assurance. Pancreatic changes have been found too often in connection with diabetes to be accidental. It does not seem likely either, that they are the result of the disease. They are too diversified to have a common origin. That they are concerned intimately with the production of diabetes, their frequency and the experimental work done on the pancreas makes highly probable.

(To be continued.)

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Clinical Department.

THROMBOSIS OF THE CENTRAL ARTERY OF THE RETINA, WITH UNUSUAL FEATURES.¹

BY EDWIN E. JACK, M.D.,

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THE patient was a small and rather thin woman, forty-three years of age, who had always had fair health, and had never had any previous trouble with the eyes. On July 25, 1893, she was seized with sudden and severe pain through the left eye. The pain was confined to the eye, and was sharp and cutting in character. On the night of the 28th, the pain, still of the same kind and situation, became excessively severe, and the sight of the eye was suddenly lost. Coincident with this the conjunctiva became injected and the eye "looked swollen" — this increasing in the next few days. For about six weeks previous to this time the patient had had attacks of sudden blindness in the left eye, possibly three a week, coming on at irregular intervals and lasting from ten minutes to two hours.

I first saw her July 30th, and at that time she was much exhausted by the terrible pain and the entire loss of sleep for three nights. The condition of the eye was as follows. Conjunctiva injected and quite cedematous, raised in a mound partly around the cornea. V=0. Media clear. Whole fundus, except at periphery, an almost milky white, more intense around the macula. Macular region, for a space about one-third the size of disc, a pale red approaching a slaty color and sharply defined. Nerve head white except at porus, where it was pinkish; outlines obliterated. On lower temporal side a fair-sized hemorrhage, near this other very small hemorrhages. All vessels small. Some began at porus without blood-contents, but as they approached the periphery were partially filled with a granular-looking blood-column, giving the vessel an uneven appearance of local contractions and dilatations. Other vessels began at the porus with blood-contents of the same granular appearance, and as they approached the periphery lost their contents and appeared as white cords. These cords, however, were interrupted in places with small cylinders of blood — this happening mostly at the junction of branches. At every heart-beat there was a to-and-fro movement of the broken blood-column in both arteries and veins — toward the periphery in the arteries and toward the disc in the veins; but no progress was made, the blood returning to its original position. Some of the vessels with blood-contents had white borders; and two small vessels branching from the disc toward the macula were visible only as white, thread-like lines.

The appearance of the fundus August 2d was about the same, except that the macular region was a slaty-

brown color and no movement of the blood-column was visible. There was less injection and cedema of the conjunctiva. On August 4th there had been but little pain since the last visit. The region around the eye, especially the brow and nose, was tender. No cedema of the conjunctiva and very little injection. Fundus-nerve very pale, but outlines very little obscured. Some cedema of retina remaining, but general color of eye-ground pink. Macular region, for a space rather larger than the disc, mottled much as in chorio-retinitis.

The last observation was on January 25th of this year, just six months after the attack. Externally nothing abnormal. Fundus in general of normal color. Disc atrophic. Vessels about the same as previously described, but with more signs of perivasculitis. Macular region mottled, and around it spots, mostly small, of a pale-yellow color. Toward the periphery, especially between the vessel branches, there were appearances very like those seen in retinitis proliferans, but with no elevation, these patches merging into others having the characteristic appearance of disturbed retinal pigment. The eye was still absolutely blind.

Fourteen months ago the patient gave birth to a child after an easy labor. Seventeen years before this her only other child was born. About ten days after her last confinement she complained of a prickling and sleepy sensation in the right arm, which under bathing and massage disappeared. Three months later she began to have trouble in using the arm and hand, and soon they were practically useless. At present she can raise the elbow but little; the arm is fixed in a partially flexed position; the fingers also are partially flexed and have but little movement.

The present health of the woman is good. Within a year she has felt hardly as well as usual, but there have been no definite symptoms except dyspepsia. There have never been any signs pointing to cardiac or renal disturbance, and she has never had rheumatism. There is no history, and there are no signs of syphilis or of vascular degeneration. An examination of the urine at her last visit showed — color pale, specific gravity 1.012, no albumen, no sugar. The heart has been examined recently by her physician, Dr. E. S. Jack of Melrose, and is wholly normal.

There are in this case, it seems to me, several unusual and interesting features. The excessive pain and the conjunctival cedema are certainly unique and hard to explain. As far as the attacks of blindness and the fundus appearances are concerned there are several possibilities. These are embolism and thrombosis of the central artery and thrombosis of the central vein.

The case certainly has the typical appearance of embolism, with more than usual cedema. This supposition, however, does not well explain the many attacks of transitory blindness. The aura which occasionally precedes embolism, taking place in about one-fourth of the recorded cases, is, I think, rarely so frequent or complete. Schuabel and Sachs have explained these attacks by the theory that partial emboli shift their position at times, eventually becoming permanently fixed and entirely blocking the blood-current. Another explanation is that a partial embolus may cause a spasm of the vessels, thus shutting off the blood-current, this passing off and allowing the blood to circulate again.

Thrombosis of the central vein was first noted by

¹ Read before the New England Ophthalmological Society, February 6, 1894.

Loring, and corroborated later, anatomically, by Angeliucci. Its distinguishing feature in all grades is a great distention of the veins, and there is usually no diminution in the size of the arteries. In the severe cases there is a strong resemblance to hæmorrhagic retinitis, with large and tortuous veins. In our present case there were a few small hæmorrhages, but they certainly occur to a limited extent in embolism. There was no venous distention—an important negative point. With this exception the case resembles one of Loring's examples of venous thrombosis, especially as regards the extensive œdema of the retina. In his patient, who had aortic obstruction, he considered that the attacks of transient blindness which had come on at intervals for many years, were the effect of temporarily weakened heart-action on an eye with abnormal vessels. The absence of physical or other signs of heart-trouble in the present instance does not eliminate the possibility of an embolus starting from that source; but it does, it seems to me, destroy the application of such a theory in accounting for the repeated attacks.

Finally, there is arterial thrombosis, a condition which, according to Loring, Priestly Smith and others, is probably more frequent than supposed. Indeed, they consider that many of the specimens called emboli are really thrombi. The fundus changes are the same as in embolus. Previous attacks of transient blindness in the affected eye and even in the fellow eye, from probable spasm of the vessels, are given as a distinguishing feature of this condition. This corresponds more easily to the facts in the present instance than either of the other alternatives. The presence of the moving blood-columns, showing in all probability an incomplete shutting off of the current, does not aid in establishing this diagnosis, as the same phenomenon undoubtedly occurs in embolism. Unfortunately, too, the existence of perivasculitis of the retinal vessels so early cannot be taken as a sign of any analogous process further back, for the same thing can come on in the very earliest stages of embolism, where there is not any question of vascular trouble in the central artery.

It is interesting to look at the matter from another point of view—the possible connection in etiology between the monoplegia and the process in the eye. The monoplegia, judging from the nature of the paralysis, was cerebral, and it would seem most probable that it was of thrombotic origin. The existence of signs of vessel degeneration would throw much light on the question of a common pathology; their absence leaves room for doubt. Whether the blood state soon after the confinement may have had any influence in causing the monoplegia and in creating a condition of the heart or large vessels from which later an embolus could have come, is a question of importance. I will go no further than to say that, if we admit any connection at all, such a sequence seems probable.

From this standpoint, then, we come to no conclusion more definite than before. Clinically the case resembles one of thrombosis of the artery more than anything else. This diagnosis, too, explains best a pathological connection between the monoplegia and the blindness. For these reasons, and because there seems to be a growing opinion that thrombosis rather than embolism is the more usual process, I have retained that title. The conjunctival œdema may have come from an involvement of other vessels. I know of no explanation for the pain.

Medical Progress.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPER, M.D.

MEDICAL EXPERT TESTIMONY.

MEDICAL expert testimony has inexhaustible interest as a reform topic. The uses and abuses of this kind of proof continue to engage the earnest attention of medico-legal writers. As in the case of some of those chronic ailments of the human race so familiar to medical practitioners as clinical opprobria, the number of remedies suggested attests the difficulty of the treatment; so in the present instance, every year calls out a new panacea for a disorder about the diagnosis of which there is substantial unanimity among physicians. One of the latest suggestions relative to the employment of experts comes from Dr. L. C. Gray, of New York, and evidently had its source in a very extensive personal experience in court proceedings.¹ Dr. Gray's remedy takes a double form: (1) the selection of medical men by the presiding judge to sit on the bench with him in an advisory capacity in trials which do not need juries; and (2) a conference of all the medical men in cases tried by a jury. The former plan has its analogy in the use of assessors in the English admiralty courts. The latter method, in the author's opinion, would bring about substantial agreement among the medical witnesses with reference to facts and objective conditions, although conclusions therefrom, diagnostic and prognostic, might differ. To the objection that the system of medical assessors and medical conferences here urged is opposed to the principles of our law, Dr. Gray courageously answers that if that be so, "the principles of our law are radically faulty"; and again, "a law that ceases to be the embodiment of common-sense has outlived its usefulness and ought to be superseded."

WOUNDS WITHOUT INJURY TO OVERLYING CLOTHING.

Examples of the improbable serve to check the medico-legal sin of dogmatism. The following are illustrations of what must be considered an unusual combination of conditions.

Dr. Spokes, of London,² reports the case of a man who, while leading a horse, stumbled and fell; the animal trod on him in such a way as to make a wound of the scrotum out of which the right testicle was extruded so that it lay outside its normal covering. The man's explanation of the wound was that the horse's hoof forced against the scrotum the metal edge of a purse which was carried in the pocket in such a position that it lay close to the genitals. The clothing, including the fabric of the pocket, was entirely intact. The edges of the wound were clean-cut.

Dr. Wagner, of St. Louis,³ found in the foregoing a reminder of an experience of his own having similar features. While on a hunting trip through thick woods, Dr. Wagner carried a small hatchet in his belt for the purpose of cutting away a passage through the underbrush. In following game down a rather steep hill, he tripped and fell quite heavily, driving the blade of the hatchet against his thigh. He felt some pain, but as his clothing showed no external sign of a cut or

¹ New York Medical Journal, May 20, 1893.

² Lancet, February 6, 1893.

³ New York Medical Journal, March 11, 1893.

tear, he attributed his sensation to a simple bruise, until he felt the blood within his underclothing and on undressing found a cut three-quarters of an inch long in the front of his thigh. The cut was somewhat irregular and left a scar as broad as it was long. The clothing showed no sign of injury whatever.

THE DIAPHANOUS TEST AS A PROOF OF DEATH.

The term "diaphanous test" has been applied to an observation which consists in raising the hand of a supposed dead person, placing it before a strong artificial light, with the fingers extended and just touching each other and looking through the narrow spaces between the apposed fingers to see if a scarlet line or edge persists; the theory being that the presence of such a tint indicates that circulation of the blood continues and that there is evidence of life. This test received the approval of the French Academy of Medicine.

Edwin Haward presents a case which shows that the test should not be relied on alone as a conclusive one; the case also demonstrates the difficulty occasionally encountered in distinguishing real from apparent death, and the need, in such cases, of applying all the reliable methods for the prevention of deplorable haste, awaiting if need be the advent of decomposition if other appearances and conditions are in the least equivocal.⁴ A woman of seventy-three, a subject of chronic bronchitis, was found early one morning in bed, insensible and apparently dead; but she looked so like-life, although not breathing, that her family had great doubt if death had actually occurred and Dr. Haward was summoned to solve the doubt. He found on his arrival, half an hour later, entire absence of respiration, of pulse and of heart-beat; the hands, slightly flexed, were rather rigid. These signs afforded a strong presumption that the woman was dead; but her countenance looked like that of a living person. This fact and the fact that once previously she had passed into a death-like state, with similar symptoms, even to the rigidity of the arms and hands, from which state she had recovered, caused the medical attendant to apply all known reliable tests and to call in expert help for the purpose. Sir Benjamin Ward Richardson was the consultant and his observations on the body of the woman were made with unusual care. Ten tests were applied, of which eight gave affirmative results in conformity with death; but there were two which were equivocal. Blood drawn from a vein in the arm was very dark, but flowed out in a fluid state and did not coagulate when exposed to the air. But the diaphanous test was the more striking; when the hand, with the fingers brought near together, was held before a strong light, there was a distinct red line of coloration between the fingers, as is seen in the healthy living hand. The body was allowed to remain in a warm room until the final proof, that of decomposition, removed every possible doubt. Dr. Richardson observes⁵ that the lesson to be learned from this case is that the diaphanous test is of itself "positively worthless." He has seen an ordinary case of simple syncope in which there was entire absence of the rosy tint between the fingers, although the patient quickly recovered consciousness.

MEDICO-LEGAL RELATIONS OF CRANIAL INJURIES.

The head is, of all regions of the body, a part whose lesions present the greatest gravity, and are the most

often fatal; it is particularly exposed to contusion injuries which represent weapons of the most primitive kind, and which offer the most frequent examples of homicidal violence. Maissiat,⁶ of Lyons, has made a comprehensive study of these injuries of the skull. He calls attention first to the difficulties met in determining the kind of weapon with which a given scalp-wound has been made; a blow with a blunt instrument may make a wound upon the head resembling an incised or punctured wound. In these cases the use of a lens is a valuable aid; it discovers irregularities of the edges and deeper parts not apparent otherwise. Scalp-wounds tend to take on a rectilinear appearance in consequence of the retraction of both the pericranium and the outer tissues of the scalp where the parts are divided; this tendency is more marked in the scalp than in any other part. Another important medico-legal point is brought out by the author: there may be fracture of the skull without any lesion of the external soft parts or any external suggestion of traumatism.

For medico-legal purposes, cranial fractures are studied by Maissiat according to the method of their production: (1) by puncture; (2) by a cutting weapon; (3) by contusion; (4) by a fall from a height. In fractures of the first group, the lesions are limited to the point struck; if the weapon is of medium size, there are no radiating fissures in the bone, and even if the weapon is of considerable size, the stellate radiations are not extensive. Fractures by a cutting weapon (sabre, hatchet) show most often a clean section of the bone, with fissures extended in the axis of the principal lesion, with few fragments, and with only an exceptional extension of the break into the base of the cranium. Blows with a club cause a more or less comminuted fracture, with radiations extending from the chief lesion, and offering no uniform rule of extension; if the weapon used has a broad striking surface, the bony lesion which results is more apt to penetrate to the base of the skull, thus resembling the effects of a fall. In these latter cases, unless the fall is very considerable, the comminution is not extensive; in any case, it is very common to find the fissure or fissures projected from the vertex to the base, especially into the anterior fossæ. Experiments by Perin have shown that these indirect lesions of the base of the skull are rarely the result of any injury other than a fall; that they do not readily follow a blow with a club, however heavy the blow may be.

PHENOMENA AFTER DECAPITATION.

Laborde has reported some instructive observations upon the head and body of a man executed by decapitation.⁷ In two-and-a-half minutes after the axe of the guillotine fell the oculo-palpebral reflex failed to respond. The patellar reflex continued to the end of the third minute. The persistence of the reflexes through even this short interval proves, at least, that decapitation does not cause immediate and absolute inhibition. The cardiac impulse continued eleven and a half minutes. The cadaver presented the penis in a state of erection, without a discharge of any kind. The right frontal lobe of the brain was uncovered by trephining, the operation being begun twelve minutes after the decapitation; after exposing the motor convolutions, an electric current was passed for stimula-

⁴ *Lancet*, June 10, 1893.

⁵ *Asclepiad*, vol. x, No. 38.

⁶ *Marseille-médical*, July, 1893.

⁷ *Le Bulletin Méd.*, June 21, 1893.

tion of the gray matter. Very clearly defined movements of the right facial muscles resulted. Laborde's explanation of the appearance of the muscular contractions on the right side, rather than on the left, is that the electric current was diffused.

DEATH BY HANGING.

In the course of some investigations into the pathology of subserous hæmorrhages in asphyxia, Corin instituted a series of experiments on the blood-pressure and the nervous phenomena in death by hanging.* Repeating with some modifications the observations of Fredericq, Konow and Steenbech, he established the important part which compression of the carotids and pneumogastric nerves has in the course of death by hanging, and demonstrated the secondary or negative importance of occlusion of the jugular veins. With regard to the pneumogastrics, Corin found that pressure on those nerves, whether they were isolated or not, resulted in a slowing of the respiration and a coincident quickening of the heart-beats. There is no questioning of the truth of Coutagne's theory that compression of the vagi abridges the duration of the asphyxia in hanging.

With regard to compression of the carotids, experiments by injection prove the complete occlusion of those arteries when the body is suspended by the neck, and such being the case, there must necessarily be a marked degree of cerebral anæmia to aid in the fatal issue, for the vertebrals are too small and tortuous to maintain the supply of arterial blood.

DEATH BY STRANGULATION.

Strangulation as a method of suicide is so rare that the following instance is of interest.* This case was the subject of an inquest at Hastings, England, the deceased being a middle-aged female servant. Her dead body was found in a room whose windows and doors were locked on the inside; it was lying on the floor, face down, with the hands beneath the chest. There was no appearance of struggling. Blood oozed from the mouth, and the tip of the tongue protruded. Around the neck were two yards of list, and, over this, three yards of tape; neither of the ligatures was knotted, but was simply wound about the throat, below the cricoid, evenly, layer on layer. The only clothing was a night-dress, and alongside the body, on the floor, was a blanket. A little blood was found on the pillow of the bed in the woman's bedroom, and the surgeon who made the autopsy testified that, in his belief, the strangling was begun in this room, and was completed in the room where the body was found. The woman was a strong, muscular person; her motive for self-murder was not determined, although there was some evidence that she had been a subject of religious mania. The post-mortem appearances were those of asphyxia.

THE DOWNING PROFESSOR OF MEDICINE.—The Downing Professorship of Medicine in the University of Cambridge, England, which was left vacant by the retirement of Dr. Latham after a service of twenty years, has been filled by the election of Dr. J. Buckley Bradbury of Cambridge.

* Bulletin de l'Acad. royale de Med. de Belgique, March 25, 1893.
* British Medical Journal, July 15, 1893.

Reports of Societies.

OBSTETRICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

O. H. WASHBURN, M.D., SECRETARY.

MEETING of November 24, 1893.

DR. E. W. CUSHING read a paper on

THE OPERATIVE TREATMENT OF UTERINE FIBROIDS.¹

DR. JOHN HOMANS: I am glad to hear this full and honest report from Dr. Cushing, giving the results in all his cases, whether good or bad. This is the only way we can arrive at any conclusions as to the advisability of operations or methods of operating.

In these cases of fibroid tumors wisdom is shown in choosing the cases that ought to be operated on, and in letting alone those that will do well unmeddled with. I have seen about 600 cases, and have operated upon about eighty. I presume that some of the 520 I ought to have operated on, and that in some of them my diagnosis was wrong; but I have tried to choose wisely. I always ask women on whom I do not operate to come and see me again in six months, or sooner, so that I may keep track of the tumor. I have watched a number of women, and have seen tumors diminish and disappear, and others increase in size; and I have operated on a tumor whose growth I had watched for thirteen years. I must say that I operate more frequently now than I did five years ago. I have operated nineteen times during these past ten months. Sometimes the shock of the operation in removing a large tumor full of blood is severe. I have had one lately where the tumor was not simply red in color, it was scarlet; and the removal of the tumor with other hæmorrhage caused a fatal result from shock twelve hours after operation. Very much blood was taken away with the tumor.

Fibroid uteri occasionally become cancerous. I have seen this happen in an old calcified fibroid which I saw at an ovariectomy in a woman of seventy. She died of cancer of the uterus four years after ovariectomy. This would be an argument in favor of operating on fibroids. Sometimes the blood-supply of fibroids will be cut off without apparent cause, and they will slough. I removed one about a month ago which filled the uterine wall symmetrically and was about nine inches by six inches in size. It was brown, and would have caused the patient's death in a few weeks or months. I did not suspect the condition before operating. Although the pedicle was treated intra-peritoneally, the patient left the hospital at the end of three weeks, having had no rise of temperature.

Fibroids may become filled with dilated lymph-spaces, and these spaces may become the seats of hæmorrhages of quite an extensive character. Both of these last two conditions would warrant removal. Adhesions in fibroids are very rare, but sometimes one meets with quite serious posterior ones, causing much hæmorrhage if they are attached to the mesentery, as I have once seen them. Some tumors grow very large slowly, and some diminish in size without apparent cause. If you only see these cases once you cannot tell which will grow and which will remain stationary or retrograde; but if you can watch them, you may be able to decide wisely.

I have had to operate once during pregnancy. I

¹ See page 301 of the Journal.

had advised against marriage on account of the fibroid; but my advice was not heeded, and pregnancy followed. A practitioner who was called thought the case was one of ovarian tumor; and as there seemed some doubt about the character of the tumor, I got Dr. Mixer to draw out a little disk of the growth. This little operation caused intense pain, so that at least a grain of morphia was injected in the course of about an hour, I think. The next day the patient was insane, and became more and more violent; the temperature rose; and I operated to save her life. I was able to remove the tumor without opening the uterine cavity, or removing the ovaries. The stump was treated extra-peritoneally. About ten days afterwards abortion took place, and sanity gradually returned. A little blood comes out of the scar at the menstrual periods.

I have removed some very large tumors and some very small ones. The largest was fifty-two pounds in weight, and the smallest a few ounces. Electricity à la Apostoli is useful in relieving pain and in checking hæmorrhage; but it does not diminish the size of the tumor, as a rule, unless the menopause occurs during or soon after the treatment.

In regard to the treatment by removing the ovaries, I operated by this method several years ago. One tumor as large as a large orange disappeared in four weeks, and none has ever grown since, during a period of ten years. In another case the uterine hæmorrhage continued; and two years after removal of the ovaries, I removed a large pediculated fibroid through the vagina, so that the loss of the ovaries was unnecessary. Two other cases were unaffected when I last heard from them.

The method of operating that I most affect at present is the intra-peritoneal one. I tie off the ovaries and broad ligament, and then amputate the uterus, as I would the thigh in a circular amputation, tying the uterine arteries just before I sever the neck of the uterus and burning out the uterine cavity thoroughly with the cautery. I do not think there has been much difference in the mortality following the two methods in my experience.

DR. M. H. RICHARDSON: The mortality in hysterectomies for fibroids is still so large that the question of interference should not be hastily decided; nor should the woman be advised to run so great a risk unless the indications are clear. In uncomplicated cases, in which the patient's strength is good, the mortality is small. Yet, in spite of all precautions, deaths do occur from causes beyond human control as well as from accident that may be avoided. Among the former are thromboses and embolisms; the latter include chiefly errors in technique and accidental contamination of the peritoneum from the uterine canal. The danger from avoidable errors is steadily diminishing, and we can predict with some confidence the result in a given case. Yet the risk is still considerable.

There are two indications for this procedure which may be pressing: the one a debilitating hæmorrhage, and the other an exhausting pain. Both indications not infrequently exist in the same patient. A third indication common to all large abdominal tumors is the existence of pressure symptoms. This last may be more important than all others. Among the less serious complications should be included the malignant degeneration that occasionally develops in the tumor. This, however, in my experience, is extremely rare —

so rare that it may be practically disregarded as an influencing factor in prognosis.

The most important indication for interference, perhaps, is great rapidity of growth. This symptom combined with hæmorrhage, or with discomfort, or with both, renders an operation imperative. Hæmorrhage itself, if it is causing serious debility and does not yield to palliative treatment, demands surgical interference. Long-continued pain or a discomfort that makes life unbearable, while not demanding operation, justifies it. Whatever the symptoms may be, we are not warranted in letting them continue until the strength is so reduced that the dangers from operation are materially increased.

The method of operation to be chosen depends upon the case, the length of the pedicle, the accessibility of the tumor, the necessity for speed. If the patient's strength justifies the more prolonged method of total extirpation, this is much to be preferred to the extra-peritoneal treatment of the stump. If the patient is so reduced that there is danger in prolonged manipulations we cannot use the intra-peritoneal method.

The Trendelenberg posture has made abdominal hysterectomy one of the most beautiful operations of modern surgery. In this position the dissection of the cervix can be carried out with perfect accuracy; the ureters can be isolated and protected, the blood-vessels seen and tied. In closing the wound the pelvic floor can be covered in with peritoneum, perfectly adjusted and sutured. General peritoneal infection can be avoided in this operation by means of sterile gauze barriers. In case of suspected infection vaginal drainage can be used successfully through the posterior cul-de-sac, either by means of rubber tubing, gauze wick, or by both. By this method even the more septic diseases of the uterus, like cancer, can be removed with small mortality. In one case I removed successfully the whole uterus containing a sloughing fibroid of the foulest description. There was no infection of the peritoneum whatever.

In the extra-peritoneal method the disasters that have occurred in my experience have been caused by an infection from the uterine canal. The danger from this source is also present in the total intra-peritoneal extirpation, but it may be materially lessened by preliminary irrigation and packing. In the extra-peritoneal treatment the infection is apt to take place at the time of amputating the tumor.

On the whole, hysterectomy is one of the most gratifying in the list of abdominal operations. The signs of the times point towards earlier and more frequent interference, with a corresponding increase in favorable results.

DR. A. T. CABOT said that he regarded the extra-peritoneal method as safest when a stump could be obtained and easily brought to the surface. He said that he had had a considerable number of operations for uterine fibromata, and perhaps he could show the dangers that he had met with best by reporting briefly the cases of death that he had had.

The first one was in a patient with a very large tumor, so large that many years before she had been advised never to have it operated upon, and had only been driven to this course by the excessive discomfort and almost helplessness that its size had entailed. The tumor grew down so into the vagina, that it could not be wholly lifted up and the pedicle had to be made through a portion about four inches in diameter before

impression, and certainly as much as three inches it had been compressed by the wire. The tension was so great upon this pedicle, that there was some sloughing both of the bladder and of the rectal wall. The fistulae, discharging fæces and urine, healed up after a time, and everything seemed to be going well; until she suddenly, about four months after the operation, developed uræmic symptoms, which were evidently due to the compression of the ureters, owing to a contraction of the scar tissue in the pelvis. Of this she died.

The second case was one in which a woman with a sloughing fibroid on the top of the uterus became pregnant. Dr. Cabot saw her at the hospital, after the fibroid had set up considerable peritonitis. She was quite sick when she first entered, but became somewhat better, and it was deemed wise to remove the tumor. The fibroid was found adherent over a considerably inflamed area of the peritoneum. It was easily separated and the uterus was removed with the fibroid. She lived only about forty-eight hours; and at the autopsy it was found that the peritonitis had started from that portion of the peritoneum that had been in contact with the sloughing tumor.

The only other case of death after the removal of the uterus that he had had, was in a healthy woman with a fibroid of considerable size. The stump was treated intra-peritoneally.

The amputation was made through the cervix, and the stump, which was cut in a cup-shaped manner, was carefully drawn together by interrupted sutures. The closure seemed perfect. This patient did exceptionally well for two days. Then, without any special abdominal pain, she began to vomit, and died of a mild, septic peritonitis, starting about the stump of the uterus.

In addition to these cases of complete removal of the uterus for fibroid, Dr. Cabot said he had a number of times shelled out small fibroids by simply splitting the peritoneal covering and turning them out of their capsule. These cases have all done well and in some of them very great relief of symptoms has followed. A small fibroid, wedged down in the pelvis, close to the neck of the uterus, may cause more pain and discomfort than a much larger one which rises into the abdominal cavity.

On one or two occasions, when the removal of the fibroid uterus appeared to present more than usual difficulty on account of the depth within the pelvis at which the uterus lay, he said he had contented himself with removing the ovaries. This was done, both with the object of checking the growth of the tumor, and also of checking the hæmorrhage, which in one case, at least, was a very troublesome symptom.

Hitherto these cases have done well; and although the want of success reported by other operators would lead him to think that he had been fortunate in not having after trouble, yet he was still inclined to resort to oöphorectomy in difficult cases, where the risks of the removal of the uterus appeared greater than the difficulties which the patient suffered from, would warrant.

DR. E. W. CUSHING, in closing the discussion, described the method by which in all cases the stump could be diminished by enucleating any masses of fibroid tissue which have grown near the cervix, so that finally nothing is left but the uterine tissue proper. In this way the stump should never be thicker than

the size of two thumbs. In thus enucleating and forming the stump, it is of the greatest advantage to use a rubber constrictor, for by its elasticity it allows nodules of fibro-tissue to be extracted from under it. After the stump is formed, a wire constrictor can be used if the operator prefer, although it is hard to see what advantage this offers over the rubber tubing.

In regard to selecting cases for operation, Dr. Cushing repeated that he would only operate where there was hæmorrhage, rapid growth or considerable pain, or where the tumor acted injuriously by compressing the rectum or ureter.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED Meeting, held at the New York Academy of Medicine, Tuesday evening, February 6, 1894, DR. M. ALLEN STARR, President, in the chair.

ELECTRICAL REACTIONS AND THEIR VALUE IN DIAGNOSIS AND PROGNOSIS.

The PRESIDENT said that he has seen statements from various sources, some very dogmatic and others sceptical, in regard to the value of electrical tests as an aid to diagnosis and prognosis in various forms of nervous diseases. A careful review of the literature of nervous diseases will reveal to any one that most men who have written books on this subject have gone right back to the original article of Erb, published in 1872, in the first edition of Ziemssen's Cyclopaedia, and have recopied Erb's diagrams and statements. Individuals who have had many opportunities of making electrical tests have noticed from time to time that their results did not correspond with the statements laid down by Erb. Their results, however, were not made public, or else they tried to explain them away, as if there was something wrong with them. A discussion on this subject, therefore, is very timely.

DR. C. L. DANA opened the discussion, and spoke of the value of electrical reactions in spinal lesions. In connection with this subject he has lately studied a certain number of cases in which he was able to test the reactions many times in the course of the disease. The tests were made in cases of anterior polio-myelitis, progressive muscular atrophy and bulbar palsy; also in one or two cases of facial palsy and locomotor ataxia.

It was absolutely necessary, Dr. Dana said, in making any comparative statements about our results, that we should understand how the reactions were taken by each observer, and what he means by reaction of degeneration. The reactions were subject to such variability, and it was so easy to deceive one's self, that the operation required an extremely judicial state of mind and great care. In the tests made by himself he employed an indifferent electrode, about the size described by Erb; this was to be tied down, not held by the hand, so that there were no variations in the amount of pressure. For the active electrode he employed a small, pointed electrode, the surface of which measures one square centimetre each way. By means of this you can get the muscular irritability at different parts of the muscle, you can see whether the contractions are sluggish or otherwise, and you also learn the diffusibility of the contraction, which is a form of reaction which has not been sufficiently noted. If an electrode with a large surface is employed, the diffusible reaction is not brought out with any certainty. The

small, pointed electrode can also be shifted to the motor point of the nerve, and thus the nerve reaction be obtained. In some cases the strength of the current required is so great that the point electrode gives rise to too much pain; in such a case he employs the ordinary-sized electrode. The electrode is first placed on the body of the muscle, and reaction obtained with a gradually increasing current; and then the same reaction with a gradually decreasing current. These reactions are compared with those on the opposite side and the operation repeated two or three times with a proper interval between, in order to allow the muscle to rest.

The three points that he has particularly investigated in connection with spinal lesions are: First, the relative irritability of the two poles; second, the character of the reactions, that is, whether they are sharp or sluggish, or sluggish and diffuse; and third, the course of the variations of the reactions in the different stages of the disease.

With regard to the relative irritability of the positive and negative poles, many of the recorded cases merely showed that the cathode exceeded the anode in irritability, without giving the exact number of milliampères required to produce contractions. Dr. Dana said he considered this an inaccurate method of making the measurements. In all reports it should be carefully put down how many milliampères are necessary to produce a positive pole contraction, and then a negative pole contraction, or *vice versa*. In this way, by following the course of the disease, we should find that each pole had a definite course of increased and decreased irritability, in accordance with the progress of the disease. The speaker exhibited a number of diagrams which he had prepared, showing the course of the polar irritability in several cases of progressive muscular atrophy, in two cases of anterior polio-myelitis and in one case of double facial palsy; in the latter case he was able to make daily examinations of both sides of the face for a number of weeks. His observations go to show that there is a difference between the course of the polar irritability in neuritis and that in progressive muscular atrophy and polio-myelitis. In neuritis there is a pronounced steady rise in the polar irritability, while in the spinal lesions it is very slight or absent. So far as his observations go, there is a true degenerative reaction in progressive muscular atrophy, as there is in polio-myelitis, but we only get it in certain stages of the disease. In all the descriptions of electrical degenerative reactions, the fact is spoken of that in normal muscles and in partly degenerated muscles the reactions are sharp and quick, but that when the muscles become degenerated the reactions are sluggish or vermicular. Further than this, with the point electrode there is a diffuse contraction of the muscle; that is, the whole belly of the muscle and even the adjacent muscles will contract. This diffusibility of the contraction, Dr. Dana said, he considered equally important with the sluggishness, although it does not always take place. It was better seen with the anodal contraction.

In conclusion, Dr. Dana thought we ought to revise many of our views of the reaction of degeneration; but it was too soon to formulate new views.

Dr. W. M. LESZYNSKY continued the discussion, confining his remarks more particularly to the value of electrical reactions in cases of traumatic neuritis. His method of making the examination, he stated, was very

similar to that outlined by Dr. Dana. The conclusions drawn by him were as follows:

(1) That the value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not as universally recognized as its importance demands.

(2) That the result of this procedure often furnishes corroborative and conclusive evidence, where only a provisional diagnosis has been made.

(3) That the necessary technical skill in successfully pursuing such investigations and correctly interpreting the result can only be acquired through special study and practice.

(4) That the use of the faradic current alone is quite sufficient for diagnostic purposes.

(5) That, as a rule, the galvanic current is supplemental to the faradic, and in the absence of faradic irritability in nerve and muscle it is of the greatest service in prognosis.

(6) That the discovery of the reaction of degeneration is not an essential feature in the differential diagnosis as to the location of the lesion.

(7) That the peripheral nerve fibres possess an inherent power of regeneration which seems almost unlimited, the length of time required for the completion of the regenerative process varying from a few weeks to seven years or more. Therefore, in severe forms of injury, the cause, degree and character of damage to the nerves are often of greater importance in prognosis than the demonstration of the reaction of degeneration.

(8) That the presence of reaction degeneration, or partial reaction degeneration, is not incompatible with the preservation of motility in the same area. This paradoxical condition has been found in cases of lead-poisoning and a few others; but thus far the cause has been inexplicable.

(9) That strong currents are only rarely necessary. The weakest current that will produce a distinctly perceptible reaction is all that is requisite.

(10) That a decrease or disappearance of faradic irritability in nerve and muscle simply denotes an interference with the nutrition in the course of the motor tract between the multipolar cells in the anterior horn and the peripheral nerve distribution. It does not enable us to judge of the nature of the pathological process.

(11) That the character of the reactions does not differ, whether the lesion be situated in the cells of the anterior horn, the anterior nerve roots, the nerve trunks, or in their ultimate distribution. The same rule holds good in reference to the various cranial motor nerves and their nuclei, such as the facial, hypoglossal and spinal accessory nerves.

(12) When the farado-muscular irritability is lost, no reaction can be obtained by a rapidly interrupted galvanic current.

(13) The secondary current from an induction coil is the one generally used in testing faradic irritability. Owing to its high electro-motive force, the resistance encountered in the moistened skin may be disregarded.

(14) The difference in the poles of the faradic current is only a relative one, and cannot be determined by the usual tests as applied to the galvanic current. The electro-motive force in the secondary coil is greater at the "break" than at the "make." The electrode that is felt to be the stronger in its action is usually considered as the negative or so-called "faradic cathode."

(15) In some apparently healthy individuals the musculo-spiral nerve fails to react to strong currents applied with the "faradic anode," while a comparatively weak current from the "faradic cathode" calls forth a quick response.

(16) In a case of undoubted peripheral paralysis the faradic irritability may be preserved, but it almost invariably requires a stronger current to produce muscular contractions than upon the healthy side (quantitative decrease); Dr. Leszynsky said he has never seen a case where this could not be demonstrated within a few days after the onset of the paralysis.

(17) The character of the muscular reaction demands attention. A slow and labored contraction associated with decrease in faradic irritability denotes degenerative changes.

(18) The faradic irritability may return in persistent cases of peripheral paralysis without any perceptible improvement in motility.

(19) Electro-diagnosis is inapplicable in paralysis of ocular muscles.

(20) When the farado-muscular irritability is lost upon skin excitation, its presence may be demonstrated in the muscle for a longer time by means of acupuncture.

(21) If electricity is to be of any service to us in ascertaining whether the nerve trunk has been divided or not, as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if special surgical interference is necessary. Should two or three weeks elapse before such examination, it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for.

(22) The tests with the galvanic current require adequate apparatus and a working knowledge of the relationship between electro-motive force, resistance and current strength. It also requires much time, patience and perseverance; hence its unpopularity.

DR. M. A. STARR spoke of the value of electrical reactions in cases of multiple neuritis. He reviewed the conclusions of Nothnagel, Pal, Gowers and others on this subject, and gave the histories of a number of cases of multiple neuritis coming under his observation. The first case reported was one of general alcoholic multiple neuritis, with total paralysis in both arms and both legs. In this case, within two months after the onset, when the paralysis was extreme and when no voluntary movement was possible in the muscles of the arm, forearm or hand, the electrical reactions differed completely in these localities; in the arm there was a diminution of response to both currents without polar changes; in the forearm there was a loss of faradic response and diminution of galvanic response without polar changes; in the hand there was loss of faradic response, diminution of galvanic response with polar changes.

In two other cases of alcoholic multiple neuritis, very great variations were present in muscles which were equally paralyzed. In a case of diphtheritic paralysis there was a total loss of contractility to faradism, but no polar changes to the galvanic current. In another case of diphtheritic multiple neuritis, in which ataxia rather than paralysis was a marked symptom, an interesting fact was noted. There appeared to be a slight weakness in the right supinator longus muscle. The electrical reactions of this muscle, however, were

found to be normal, the reaction to faradism being prompt, and the cathode closure contraction being greater than the anode closure contraction. For purposes of comparison the left supinator longus was simultaneously tested, there being no voluntary paralysis of this muscle whatever. It was found that the reaction to galvanism in this muscle showed polar changes, the anode closure contraction being greater than the cathode closure contraction, although there was no reduction in the faradic response. Here, then, was an observation which confirms the statement of Pal that electrical changes are sometimes present in muscles which are not paralyzed.

In closing his remarks, Dr. Starr said that every possible change to electrical reactions may be present in muscles affected in the course of multiple neuritis. The conclusion is inevitable, therefore, that to the electrical changes no very great diagnostic significance can be assigned. In the cases cited, there was no parallelism between voluntary power and electrical condition. Voluntary power in all the cases seemed to return before the electrical reactions became normal. Therefore we cannot project a reaction line upon a chart into the future and say that at a certain date, when the electrical reactions become normal, the voluntary power must necessarily return. Electrical reactions, while of some interest, are not to be taken as of great importance in the diagnosis of multiple neuritis.

DR. B. SACHS discussed the value of electrical reactions in dystrophies. In regard to the general subject of reaction degeneration, the speaker said he has been forced to the conclusion that there are only two points of value. The first and most significant feature of reaction degeneration was the loss of faradic response. The second was the sluggishness of the contraction. The variability between the anodal and cathodal contraction was extremely great, and he had long since abandoned the idea that the relationship between the two can be utilized in all cases either for the purpose of diagnosis or prognosis. Physiologists have demonstrated with considerable plausibility that the electrical excitation of nerves and muscles largely depends upon the rapidity and succession of single shocks. In muscles in which the faradic contractility seems to be absent, if you diminish the interruptions, you will often get a contraction, whereas you will not get it with the ordinary faradic machines we use. Dr. Sachs said he believed we could state that reaction degeneration was present in any given case if the faradic response was absent. He agreed with Dr. Dana's remarks regarding the variations in polar irritability in different stages of anterior polio-myelitis and other diseases. In Erb's diagrams, which have been so extensively copied, he does not differentiate between anodal and cathodal response. He does not make any distinction between the two poles. Dr. Sachs said he had found the greatest possible variability in the action of the two poles. In many cases, particularly in peripheral nerve palsies, he had found that the cathodal excitability was increased as long as the disease lasted. After full power had returned, the faradic excitability might still be diminished, or last for a period of time varying between several weeks and a year. In exceptional cases the faradic response remained normal from beginning to end, but the galvanic changes were pronounced.

The speaker said it was well to divide muscular

dystrophies into two classes, namely, primary muscular dystrophies and the so-called spinal amyotrophies. In the pure dystrophies we rarely got a definite reaction degeneration; that is, there was rarely entire absence of faradic response and marked sluggish reaction, excepting in the very last stages of the disease, when so little muscular fibre was left that we could not expect to get either faradic or galvanic response. In primary muscular dystrophy, therefore, there was no typical reaction of degeneration. In other than primary muscular dystrophies, we got a very strong resemblance to the typical reaction degeneration. In progressive muscular atrophy of spinal origin reaction of degeneration might be present in its entirety; but we often found partial reaction of degeneration and other irregular types of electrical reaction.

As regards the value of electrical reactions in diagnosis and prognosis, Dr. Sachs said he was fully in accord with the statements made by the previous speakers. He still believed that Erb's observations were extremely well founded and held good in the majority of cases. It was certainly true that if the faradic response — in a case of facial paralysis, for instance — was never lost, in nine cases out of ten recovery will be more prompt than where it was lost. That the faradic irritability returns in some cases before the power, as claimed by Dr. Leszynsky, he thought exceptional, to say the least. It was much more certain that the power returned long before the faradic response did, in the vast majority of such cases.

As regards the value of electricity as a means of prognosis in cases of muscular dystrophy, the speaker thought it was very slight. The senses of sight and touch will teach us much more than the electrical examination in such cases. By the degree of response to the faradic and galvanic currents we can get some idea as to the condition of each individual muscle, but no definite conclusions can be drawn. In some cases of typical muscular dystrophy, certain muscles unquestionably do recover; others do not. In the cases which recover, the electrical reactions do not undergo any decided changes.

DR. A. D. ROCKWELL said he agreed with Dr. Sachs that the main importance of electricity as an aid to diagnosis was in connection with the absence or presence of the faradic reaction. The importance of this subject to the general practitioner was impressed on his mind by a case that recently came under his observation. The case was one of facial paralysis, and the patient for seven weeks had been under the care of a general practitioner, who treated him with the faradic current without any benefit. Under the use of galvanism the patient at once began to improve. The following case indicates very positively the value of electricity as a diagnostic agent. The case was one of typical facial palsy on the right side from peripheral causes. During the course of the patient's recovery from this, a paralysis occurred on the left side of the face; this started as a peripheral paralysis, but on testing the muscles with faradism, it was found that they responded with perfect facility. Therefore, it was evident that the paralysis on this side was central. Shortly afterwards the patient had a second attack involving the right side of the face, again peripheral. Dr. Rockwell said that in ovarian or uterine diseases of an inflammatory character, the faradic current produces no improvement, but rather aggravates the pain;

while in non-inflammatory conditions the faradic current will relieve the pain.

DR. GEORGE W. JACOBY said that the statements made in the text-books on this subject are too dogmatic. The diagnostic value of electricity is limited to certain peripheral affections, and even there it is not as great as originally claimed. In prognosis, also, we must limit its value. In a number of cases of facial paralysis of long standing, he has found it impossible to obtain any reaction of degeneration. In a couple of other cases in which the paralysis had entirely disappeared with the exception of a slight obliteration of the labio-nasal fold, there was marked reaction of degeneration. These are exceptional cases, and he could give no explanation of them. Cases have been published in which there was a reaction of degeneration found in cerebral palsies; also in cases of primary dystrophy.

DR. C. A. HERTER referred to the electrical reactions in some cases of cerebral palsies. In one case under his observation, a woman aged seventy years, the patient had a series of slight apoplectic attacks, succeeded in time by complete paralysis of the right side of the body (face, arm and leg) and complete motor aphasia; at the end of one week distinct atrophy of the muscles of the forearm was noticeable, and at the end of one month it was very pronounced. The faradic irritability of certain muscles of the forearm was very much reduced. The contractions were exceedingly sluggish, and the reaction of degeneration was undoubtedly present. The galvanic irritability of these muscles was somewhat diminished. Dr. Herter also referred to the rapidity with which the reaction degeneration makes its appearance in some cases of injury to the spinal cord. In two instances coming under his observation it was pronounced at the end of four days.

DR. L. STIEGLITZ agreed with Dr. Sachs that the most important feature of the reaction of degeneration is the sluggishness of the contraction. It must be borne in mind that muscles of coarse fibre react much more sluggishly than those made up of fine fibres.

DR. G. M. HAMMOND said he agreed in the main with the statements made by the previous speakers. Like Dr. Sachs, he had noticed that muscles which do not respond to a rapidly interrupted faradic current will respond to a slowly interrupted one. The reverse is true with the galvanic current. With a battery that he employs he can get about 170,000 interruptions per minute, and he has found that the greater the number of interruptions, the stronger the current required. This rule applies in both healthy and diseased conditions.

DR. STARR narrated the history of a case of facial paralysis that came under his care. An examination showed increased contractility to galvanism in the muscles, and perfect preservation to faradism, the cathode being greater than the anode. On the strength of this he gave a favorable prognosis. After six weeks' careful treatment the reactions remained about the same, but the paralysis was no better. The patient then went to another neurologist who made a similarly favorable prognosis, and applied electricity with equally unfavorable results. That is now a year and one-half ago; the reactions are still normal, but the face remains just as much paralyzed as it ever was.

DR. DANA exhibited a Portable Perimeter which he has devised. It is made by Meyrowitz & Co., of New York.

Recent Literature.

A Treatise on Diseases of the Rectum, Anus and Sigmoid Flexure. By JOSEPH M. MATHEWS, M.D., Professor of Surgery, and Clinical Lecturer on Diseases of the Rectum, at the Kentucky School of Medicine, etc. Six chromo-lithographs and numerous illustrations; 537 pages. New York: D. Appleton & Co.

This book has been written to record individual experience acquired during fifteen years' practice as a rectal specialist. The intention has been to state only what is substantiated by fact. When this differs from statements of other authorities, both conclusions are given and the reader is left to decide between them.

Besides discussing the subjects usually treated in works of this class, namely, hemorrhoids, fistulæ, rectal ulcers, fissure stricture, cancer, tumors and malformations, the writer has introduced chapters describing disease of the sigmoid flexure, rectal neuralgia, hysteria, rectal reflexes, rectal antisepsis, and a new operation for fistulæ.

The book is an attractive volume, clearly printed and well indexed. The style is concise, and the author's statements direct. His ideas are practical, and are interestingly presented. Dr. Mathews states definitely what he thinks and what his experience has taught him. He makes no effort to harmonize it with oft-quoted ideas or theories if it does not so correspond. If a method of treatment is efficient, he so describes it. If in his practice he has found the reverse true, he condemns it in no doubtful terms. Such a book is easy to read and understand. It is one which contains information of value, both to the specialist and general practitioner. It is well illustrated.

Lectures on Mental Diseases. By HENRY PUTNAM STEARNS, A.M., M.D. Pp. 627. Philadelphia: P. Blakiston, Son & Co. 1893.

These twenty-nine lectures form, as a whole, a useful text-book. Although no new light is thrown on the subject, the established facts relating to the different features of insanity are graphically stated, and the numerous illustrative cases will appeal strongly to the interest of "the student and practitioner, for whom the volume is especially designed."

The classification offered is a very satisfactory one for its purpose. It is of a mixed ætiological and symptomatological variety. The term "paranoia," which has become so general in its application, the author looks upon as a palpable misnomer, on the ground that it is a Greek name for insanity in general applied to a special form, and one, moreover, which has no relations with any basis of nomenclature. He accordingly uses the more accurate and familiar term "primary delusional insanity."

In the chapter on "Insanity of the Puerperal Period"—one of the best in the book—we find the suggestive statement, based on the statistics of thirty-nine recoveries, that age was a factor of no importance in promoting the prognosis or duration of the disease, and that the recoveries were not particularly hastened by early admissions.

We regret that so high an authority has not thought it necessary to give us his views on the relations between ordinary insanity and syphilis, or to accord more than a brief allusion to the recognized influence of that important agent in general paresis. The diagnosis of the latter disorder is inadequately considered also,

not only as regards cerebral syphilis, but also ordinary diffuse and focal lesions of the brain. Some suggestions as to the method of examining the insane for certification, would surely have been welcome to the general physician; and we are left in the dark as to many of the borderland states between mental health and disease, as well as the simulation of insanity.

These omissions, however, do not seriously detract from the value of the book, which is sure to find favor with those for whom it is designed, by reason of its thoroughly practical tone. Extracts from the laws of the different States and Territories of the United States, which relate to the general care of the insane, are appended.

Rest and Pain. A Course of Lectures on the Influence of Mechanical and Physiological Rest in the Treatment of Accidents and Surgical Diseases, and the Diagnostic Value of Pain. By the late JOHN HILTON, F.R.S., F.R.C.S., Surgeon Extraordinary to Her Majesty the Queen, Consulting Surgeon to Guy's Hospital, Member of the College Council, President of the Royal College of Surgeons of England, Member of the Court of Examiners, and Professor of Anatomy and Surgery, etc. Edited by W. H. A. JACOBSON, M.A., M.B., M.Ch.Oxon., F.R.C.S., Assistant Surgeon to Guy's Hospital, Surgeon to the Royal Hospital for Children and Women. Fifth edition. London and New York: George Bell & Sons. 1892.

There can be no doubt of the value of this book. It is more than a monograph, and can be safely placed in the catalogue of surgical classics. The present edition is satisfactorily edited. The printing and the plates are passable. The book is in the form of eighteen lectures, and no one who is interested in surgery should neglect reading the work. There are few books in the English language which can give the reader more food for thought than Hilton's Lectures on Rest and Pain.

The Use of Antiseptics in Midwifery: Their Value and Practical Application. By ROBERT BOXALL, M.D. (Cantab.), M.R.C.P. (Lond.), Assistant Obstetric Physician to, and Lecturer on Practical Midwifery at, the Middlesex Hospital; formerly Physician to the General Lying-in and Samaritan Free Hospitals, etc. London: H. K. Lewis. 1894.

This little pamphlet is of considerable interest and value. The statistics given for the General Lying-in Hospital certainly show most admirable results. The entire absence of deaths from sepsis in the wards of so large a hospital for four years is an admirable record, and the confinement of more than a thousand consecutive out-patient cases without a single death is a result that can be rivalled by few institutions. The conclusion which the author draws from the Registrar General's Reports, as to the standard of asepsis among the general profession in England, are indeed sad, and are, we believe, even worse than that which undoubtedly exists among the less carefully trained portion of the profession in this country. A death roll of 2,356 unnecessary deaths in England, in a single year, is certainly sufficient justification for the publication of this work. The language of the pamphlet is clear, concise, and striking; the precautions recommended are excellent, and leave nothing to be desired, except the use of the nail-brush and nail-cleaner, which, strangely enough, are never mentioned.

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THE REGISTRATION OF AND PREVENTIVE
MEASURES AGAINST TUBERCULOSIS.

THE question of the wisdom of the registration of tuberculosis and the adoption of other preventive measures against this disease—by the dissemination of circulars, the affixing of placards upon houses occupied by the tuberculous, and the disinfection of rooms and apartments where there has been a death from tuberculosis—has occupied the attention of some local boards of health, notably in New York and Philadelphia, and been pretty thoroughly discussed by some of our medical societies this winter. The difficulty and delicacy of the problems involved are unfortunately in direct ratio to the importance of the question.

The American Public Health Association, at its last meeting, and the Pan-American Medical Congress adopted resolutions in favor of registration. In England, also, some of the local boards of health have petitioned the Local Government Board for sanction to include pulmonary tuberculosis as a disease notifiable under the provisions of the Infectious Diseases Act. The whole question of tuberculosis is now under the investigation in England of a Royal Commission.

The College of Physicians of Philadelphia held a special meeting in January to consider the proposed action of the board of that city in reference to the registration of tuberculosis. The following amended form of a resolution, offered by Dr. L. F. Flick, was under discussion.

Whereas, Tuberculosis is now known to be a contagious disease; and

Whereas, The methods by which the disease is conveyed from the sick to the well are now clearly understood; and

Whereas, It has been shown that the room which is occupied by a consumptive during the infectious period of the disease, and the furniture and the bed-clothing which have been used by him, become infected, and are liable to convey the disease to others who may occupy or use them subsequently; and

Whereas, Tuberculosis, owing to its long duration, cripples the bread-earning capacity of the family, when it occurs among the poor, to such an extent that the want

and hardships which follow in its wake prepare the healthy members of the family for the disease; therefore be it

Resolved, That we recommend to the Board of Health of the City of Philadelphia the registration and disinfection of houses which have been infected by tuberculosis;

Resolved, That we recommend to the City Councils of the City of Philadelphia the establishment of a municipal hospital for the treatment of persons suffering from tuberculosis.

We regretted not having space at the time for the publication of the full discussion, which was participated in by a number of the prominent members of the College of Physicians, and dealt with the various sides of the questions at issue in a broad and enlightened spirit. At the end of the discussion, the college rejected the amended resolution offered by Dr. Flick, and voted the following resolutions offered by the Council of the College:

Resolved, That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease would be adding hardship to the lives of these unfortunates, stamping them as the outcasts of society. In view of the chronic character of the malady, it could not lead to any measures of real value not otherwise attainable.

That strict attention on the part of physicians in charge of the individual cases insisting on the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well as far as possible, will meet the requirements of the situation so far as they practically can be met, and better than any rules that, for diseases so chronic, can be carried out by a board of health.

That the College of Physicians respectfully requests that no official action be taken in the matter by the Board of Health, except the insisting on the disinfection of rooms in which consumptives have lived and died in instances in which such procedure is not likely to have been adopted under the direction of the attending physician.

On the other hand, our readers will remember that in November last Dr. H. M. Biggs, of the Bureau of Bacteriology and Disinfection, in an elaborate report to the Board of Health of the City of New York, made a number of recommendations having in view the more efficient limitation and prevention of pulmonary tuberculosis. The Board, acting on the advice of the Sanitary Committee, has since adopted a series of measures designed to carry these recommendations into practical effect.

In the first place, it is proposed to place a placard upon the door of every apartment that has been occupied by a consumptive patient, stating this fact and that it has thus become infected. The remainder of the inscription reads as follows:

It must not be occupied by other persons than those now residing here until an order of the Board of Health directing that it be cleansed and renovated has been complied with.

Name of occupant ———. Floor ———. Street No. ———.
This notice must not be removed until the order of the Board of Health has been complied with.

Secondly, a circular has been prepared, which was to be issued to all physicians practising in the city,

stating that the Board has resolved to adopt the following preliminary precautions:

(1) The Department will hereafter register the name, address, sex and age of every person suffering from tuberculosis, so far as such information can be obtained, and requests that hereafter all physicians forward such information on the postal cards ordinarily employed for reporting cases of contagious diseases. This information will be solely for the use of the Department, and in no case will visits be made to such persons by the inspectors of the Department, nor will the Department assume any sanitary surveillance of such patients unless the person resides in a tenement-house, boarding-house, or hotel, or unless the attending physician requests that an inspection of the premises be made. In no case where the person resides in a tenement-house, boarding-house, or hotel, will any action be taken if the physician requests that no visits be made by inspectors and he is willing himself to deliver circulars of information or furnish such equivalent information as is required to prevent the extension of the disease to others.

(2) When the Department obtains knowledge of the existence of cases of pulmonary consumption in tenement-houses, boarding-houses, or hotels, (unless the case has been reported and the attending physician requests that no visits be made,) inspectors will visit the premises, will leave circulars of information, and will instruct the person suffering from consumption and the family as to the measures which should be taken to guard against the spread of the disease. If it is considered necessary, the inspector will make such recommendations for the cleaning or renovation of the apartment as may be required to render it free from infectious matter.

(3) In all cases where it comes to the knowledge of the Department that premises which have been occupied by a consumptive have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to the Board as to the cleaning and renovation of the apartment as may be required. An order embodying these recommendations will then be issued to the owner of the premises, and compliance with this order will be enforced. No other persons than those residing there at the time will be allowed to occupy such apartments until the order of the Board has been complied with. Infected articles will be removed by the Department, disinfected, and returned without charge to the owner.

(4) In the prevention and treatment of pulmonary tuberculosis it is of vital importance that a positive diagnosis should be made at the earliest possible moment, and that the value of bacterial examinations of the sputa for this purpose may be at the service of physicians in all cases not under treatment in hospitals, the Department is prepared to make such bacteriological examinations for diagnosis, if samples of the sputa, freshly discharged, are furnished in clean, wide-necked, stoppered bottles, accompanied by the name, age, sex and address of the patient, duration of the disease, and the name and address of the attending physician. Bottles for collecting such sputa, with blank forms to be filled in, can be obtained at any of the drug stores now used as stations for the distribution and collection of serum tubes for diphtheria cultures. After the sputum has been obtained, if the bottle with the accompanying slip filled out is left at any one of these stations, it will be collected by the Department, examined microscopically, and a report of the examination forwarded to the attending physician, free of charge.

(5) The authorities of all public institutions will be required to furnish to the Department the name and last address of any consumptive coming under observation within seven days of such time.

This circular concludes in the following words: "It is the earnest wish of the Board of Health that all practising physicians in this city co-operate with the Board in an earnest and determined effort to restrict the ravages of the most prevalent and formidable disease with which we have to deal."

In the third place, a circular has been prepared for general distribution, especially among consumptives and their families, which treats of the nature of the disease, the special danger of infection from the sputa, and the measures necessary for protection, and includes a number of general sanitary directions. While endeavoring to impress upon the public the contagiousness and perils of the disease, it is hopeful in tone and encourages those affected with it and all coming in contact with them, to unite in an active crusade against it. "Consumption," it states, "can often be cured if its nature is recognized early, and proper means are taken for its treatment. In a majority of cases it is not a fatal disease. . . . A person suffering from consumption may often not only do his usual work without giving the disease to others, but may also get well, if the sputum is properly destroyed." The circular also urges that whenever a person without medical attendance, is thought to be suffering from consumption, the name and address should be sent at once to the Health Department in order that an investigation of the case may be made.

A law may be good in the abstract, but it is practical only in so far as it secures the co-operation of the community which it affects to such an extent as to permit its enforcement without excessive annoyance and expense; moreover, no law is good which causes more harm to society than it cures. The same may be said of the registration or notification of such a disease as tuberculosis, and of the adoption of general preventive measures against it. Nobody would advocate dealing with tuberculosis as with leprosy. Its chronicity is sometimes very great, and we all have before us numerous examples of those constantly and intimately exposed to its infectious principles with impunity. At what stage shall a suspected case of tuberculosis be reported?

We are disposed to sympathize, in a measure, with the position taken by Dr. Da Costa, and with Dr. J. S. Billings's statement in a letter read at the meeting of the College of Physicians:

I am doubtful as to what the decision of the College should be on this point. I presume that there are about six thousand people in Philadelphia affected with consumption, and that a considerable proportion of these have contracted the disease in infected houses. If it were possible by a systematic notification for the Board of Health to locate a considerable number of these infected houses, what steps would it take to purify them? How would it deal with those of the poorer classes who are affected with this disease, and with their furniture, bedding and rooms?

Until these questions are answered, I do not find it possible to form a definite opinion as to whether it is worth while to put in force a compulsory system of notification.

THE RÔLE OF ALCOHOL IN THE CAUSATION OF CIRRHOSIS OF THE LIVER.

CIRRHOSIS, or more properly sclerosis, of the liver, also annular cirrhosis and common atrophic cirrhosis (gin-drinker's liver) has been long regarded as chiefly of alcoholic origin. The earlier writers, as Budd and Frerichs, speak of alcohol as the ordinary exciting cause; Murchison states that he had never seen a case due to any other cause; and Frerichs adds that while there may be other causes, yet we are totally unacquainted with them. This etiological conception, based on clinical observations, has been found to be too exclusive.

Chauffard, in his masterly article on "Diseases of the Liver," in the *Traité de Médecine*, sums up his etiological classification under three heads: (1) toxic, (2) infectious, (3) dystrophic agencies, and assigns to alcohol a chief place among the toxic causes. Even here the causation is more complex than might be supposed, for the alcohol of ordinary consumption is not a constant and always uniform chemical compound, but a product of very variable and often sophisticated composition.

Létienne has taken up the subject in a recent number of *La Médecine Moderne* (February 21, 1894). While recognizing the fact that the influence of alcohol on the liver may determine a hypertrophic form of cirrhosis as well as an atrophic form, he proposes the question: "Is alcohol necessary to the establishment of atrophic cirrhosis? Is it sufficient of itself to engender this disease?"

First of all, comes the evidence from physiological experimentation. The first experiments on alcohol-poisoning were made by Dahlstrom in 1852, and by Duchek in 1853. The subjects were dogs. The autopsy indicated no lesion of the liver. The experiments of Perrin, Lallemand and Duroy, in 1860, showed that in poisoning by alcohol the different viscera retained unequal proportions, and the liver more than any other; they did not, however, indicate any particular anatomical lesions in this organ. Later, Kremiansky (1868) and Magnan (1869) obtained marked hepatic lesions; they noted cellular steatosis (acute fatty degeneration) without traces of sclerosis. The results of Rugé (1870) are the same. Pupier, in 1872, observed fatty accumulation in the livers of fowls poisoned by alcohol. Sabourin, in 1879, poisoned guinea-pigs with alcohol, and obtained "central steatosis of the lobule, with peri-sub-hepatic phlebitis." In 1884, Dujardin-Beaumetz and Audigé made an important series of observations on hogs. The anatomical examinations made by Cornil did not reveal any processes of interstitial hepatitis. Some of these hogs were dosed for a series of years with various kinds of alcohol.

Straus and Blocq in 1887 noted lesions more ad-

vanced and well defined. They produced in hares, which they had been able to keep longest under the influence of alcohol, an embryonic infiltration of the portal spaces (third month), which became more pronounced and ended by encircling the lobules about the seventh month, without, however, presenting the aspect of a dense fibrous tissue.

Other experimenters, as Maret, Combemale and Strassmann, noted the state of the liver in animals poisoned by alcohol, and found only fatty degeneration of the parenchyma. Laffitte, in 1892, in his graduating thesis compares the lesions produced as a result of experimental alcohol-poisoning with those of Lannec's cirrhosis. In the hare, he says, the prolonged ingestion of alcoholic liquids produces lesions which have no relation with common cirrhosis. The hepatic cell is almost always damaged, the connective-tissue is never irritated. *Per contra*, in studying chronic experimental lead-poisoning, he has been able to reproduce an atrophic sclerous hepatitis which has the greatest similarity to Lannec's cirrhosis.

Some experiments by Richter (1892) differ somewhat from the foregoing, and confirm those of Straus and Blocq. He obtained pathological processes strikingly like those of annular cirrhosis. There are, however, differences in the systematization of the sclerous processes, according to the animal under experimentation. The cirrhosis is peri-portal in the hare, peri-hepatic in the dog.

The writer in *La Médecine Moderne* thinks it demonstrated as a result of all this experimentation that atrophic cirrhosis is not a simple affection, due solely to the effects of the poison ingested upon the walls of the blood-vessels which this traverses in the hepatic parenchyma. When we make section of a cirrhotic liver, the lesions which we see under the microscope are not simply an expression of the action of alcohol on elements of the tissue: they are the effect of complex causes. The alcohol has a certain part, but infection or toxic-infection also impresses its stamp on the organ. The liver undergoes, from the fact of its slow impregnation with alcohol, a profound depreciation; it tolerates badly even the common infections which assault it. There comes a time when it can no longer react against them, and it suffers degeneration. The nobler tissues as they perish, are replaced by a connective-tissue proliferation.

It has been remarked that the anatomical schemes which serve to classify the cirrhotoses have not in nature the rigorous exactitude represented in the didactic treatises. Recent writings (as those of Létienne and Hanot) tend to relegate to a second rank the rôle of the peri-vascular connective-tissue, and to substitute for it that of the hepatic cell. There is no hepatic sclerosis without previous cellular alteration. At the ultimate and most characteristic periods of atrophic cirrhosis, there exists a veritable consumption of the liver. It has lost the faculty of making those efforts of struggle and of regeneration, which are observed in normal conditions. The liver becomes inactive, almost

without a physiological rôle, secreting insufficient bile without colored quality, leaving in the blood the principles it should eliminate. The normal deglobulization no longer takes place in its cells. The corpuscular *débris* appears in the urine, in the liquid of ascites; and the blood, which is charged with these waste elements, gives to the tissues a urabilinic, ictteroid tint.

These considerations have lately been presented by Hanot in an interesting study on alcoholic cirrhoses. Neither this writer nor the author of the article before referred to deny the sclerogenous power of alcohol; they only point out that this toxic agent is but one factor, and they emphasize the rôle of other toxic agents in the production of the same sclerotic phenomena. There is a cirrhosis caused by lead-poisoning, of a very typical kind, and of which we are beginning to learn much. There is a tuberculous cirrhosis, and there are certain acute infectious cirrhoses, distinct from every form of grave icterus, and which end in the same atrophic degeneration as alcohol. Atrophic cirrhosis of the liver may be the result of divers influences, certain of which are now known. It offers a uniform type of reaction of the hepatic tissue towards very varied irritant causes, and illustrates this principle of general pathology that the tissues have but limited means of reacting against agents of different species and indefinite number.

MEDICAL NOTES.

REDUCTION IN THE ARMY LIBRARY APPROPRIATION.—The House Military Committee has again cut down the appropriation for the Army Medical Library from \$10,000 to \$7,000.

ILLNESS OF SIR FRANCIS LAKING.—Sir Francis Laking, private physician to the Prince of Wales and surgeon-apothecary to the Queen, is reported to be dangerously ill in London.

THE HAMBURG CHOLERA INSPECTOR.—Surgeon Woodward who acted so efficiently as cholera inspector at Hamburg last summer has been ordered to the same port for the coming season.

CHOLERA IN RUSSIA.—On the first of March all the governments of the Russian Empire, with the exception of Volhynia, Kovno, Plock and Tchernigoff, were officially declared free from cholera.

ADJUNCT PROFESSOR OF PEDIATRICS.—W. T. Northrup, M.D., of New York, has been recently elected Adjunct Professor of the Diseases of Children in the Bellevue Hospital Medical College, as the associate of Dr. J. Lewis Smith who has held the full professorship for over thirty years.

EXAMINATIONS FOR THE UNITED STATES ARMY MEDICAL CORPS.—In view of the possibility of the reduction of the Medical Corps from one hundred and twenty-five to ninety assistant surgeons, by action of Congress at its present session, and to save possible loss of time and expense to candidates if such action be taken, the examinations appointed for March and

April, 1894, will, by order of the Secretary of War, not be held until further notice. It is probable, that, if the Corps should not be reduced, the Examining Board will be convened in the fall of 1894. Of this, notice as early as possible will be given.

SMALL-POX EPIDEMIC IN BROOKLYN, N. Y.—The Brooklyn Board of Health has declared small-pox to be epidemic in that city. There are at present over one hundred cases under care, ninety-one being in the hospital which can accommodate but one hundred and twenty. A requisition has been made upon the State for tents, three having already been set up in the hospital grounds. An appropriation of \$18,000 has been granted from the Emergency fund for special sanitary work, and a general vaccination has been ordered. The spread of the disease is now thought to have been caused by a ball given January 31st by some organization known to but not named by the authorities.

PRIZES OF THE SPANISH ACADEMY OF MEDICINE.—The Spanish Royal Academy of Medicine offers its annual prize for the best essay on the following subject, "Clinical and Therapeutical Study of Chronic Affections of the Intestine." The A. E. G. Cano Prize will be awarded for the best essay on "Infectious Endocarditis." Essays may be written in Spanish, Portuguese, French, Italian, German, or English, and must be sent to the Secretary of the Academy, 22 Montera, Madrid, before September 15, 1894.

AN INDIAN MEDICAL CONGRESS.—A proposal laid before the Calcutta Medical Society to have a general Medical Congress in India has met with much favor; and the First Indian Medical Congress will be held in Calcutta in the beginning of January, 1895. Physicians practising in every part of the world are invited to take part, especially those in India and the East. The Congress will comprise the following sections: (1) Medicine, including Pathology; (2) Surgery; (3) Obstetrics and Diseases of Women and Children; (4) Public Health; (5) Medico-legal Medicine and allied subjects.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, March 28, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 46, scarlet fever 48, measles 10, typhoid fever 6, small-pox 5 and 1 death. During the week one case of small-pox was reported to the State Board of Health from Melrose.

A NEW PUBLIC BATH IN BOSTON.—A new public bath-house has been opened at the South Cove district in Boston where bathing facilities can be had for a nominal sum, both summer and winter. It is a private concern backed by persons interested in hygienic charity, and will help to fill the need which is so marked in Boston of a large, well-appointed bathing-place during the cold months when the summer baths are unavailable.

THE COMMITTEE ON PUBLIC HEALTH.—The Committee on Public Health of the Massachusetts Legislature has reported adversely on a proposed bill to require patent medicine bottles to have on them a label stating the percentage of alcohol in the medicine, and also adversely on a bill requiring cans and receptacles used by milk-dealers to be kept free from impurities.

THE MASSACHUSETTS HOSPITAL FOR DIPSO-MANIACS.—The Committee on Public Charitable Institutions has rejected a bill introduced to provide further luxuries for the Hospital for Dipso-maniacs and Inebriates in Foxboro. It was proposed to erect a gymnasium and a swimming-tank for the patients.

A BEQUEST PAID TO THE SPRINGFIELD HOSPITAL.—The Springfield Hospital has received during the week the bequest of thirty thousand dollars, under the will of the late Mr. Horace Smith. Among other charitable institutions which received at the same time the payment of the bequests to them were the Home for Friendless Women and Children (thirty thousand dollars), and the Springfield Home for Aged Women (fifteen thousand dollars).

SMALL-POX IN PORTSMOUTH, N. H.—A case of small-pox was discovered in Portsmouth on March 25th in a farmhouse just outside the city:

NEW YORK.

HOSPITAL SATURDAY AND SUNDAY ASSOCIATION.—The distributing committee of the Hospital Saturday and Sunday Association met in the Mayor's office on March 20th and divided \$48,000 received from the annual collection among thirty-three institutions represented in the Association. Mount Sinai Hospital received the largest amount, \$5,290, and St. Luke's the next largest, \$5,153. The total sum collected this year was \$58,300. Of this about \$7,000 was specially designated for certain hospitals, and the expenses of the Association amounted to some \$3,000.

A RAID ON ABORTIONISTS.—On March 23d the police arrested sixteen advertising abortionists simultaneously in different parts of the city. The arrests were made at the request of the New York Society for the Enforcement of Criminal Law, which, through a skilful male and female detective, had secured evidence for the prosecution of the offenders. Some of the accused succeeded in securing bail, the bonds in each case being fixed at \$2,500.

PUBLIC HEALTH.—The unprecedentedly mild and pleasant weather that has prevailed during the month of March has had a marked effect upon the public health and reduced the death-rate of the city to a very gratifying extent. During the week ending March 17th the number of deaths reported was only 787, while in the corresponding week of last year, when the estimated population was at least 65,000 smaller than at present, the deaths amounted to 1,110. This mortality is also 175 lower than the average for the corresponding weeks of the past five years. Measles continues to be the most prevalent of the contagious

diseases. During the week ending March 17th there were reported 309 cases, with 25 deaths, and during the week ending March 24th, 375 cases, with 29 deaths. Diphtheria increased from 187 cases and 40 deaths to 220 cases and 53 deaths. Small-pox and scarlet fever do not show any material change; but there was some decrease in the mortality from pneumonia, and the deaths from influenza decreased from 12 to 4. There are very few cases of typhoid fever reported, and during the week ending March 17th there were but 2 deaths from this disease.

DEATH OF DR. STANARD.—Dr. Alfred Cushman Stanard, one of the most promising young physicians in the city, died at the New York Hospital on March 20th of peritonitis resulting from appendicitis. On the 16th he was operated upon, and at first it was hoped that the procedure would be successful in saving his life, but an extension of the peritonitis soon followed. Dr. Stanard was born in New York and was twenty-nine years old at the time of his death. He was graduated from the Medical Department of Harvard University in 1889, and afterwards served as an interne at the New York Hospital. Later he was appointed one of the attending physicians to that institution.

Miscellany.

AUTOPSY ON THE GREENWICH ANARCHIST.

THE autopsy recently made on the body of the man killed in Greenwich, England, by the explosion of a bomb held in his hand, is of considerable interest as showing the variety of lesions possible in such an accident.

The report shows¹ that the man held the bomb in his left hand about on the level of the abdomen. It is remarkable how little damage was produced by the bomb. The left hand and wrist were blown away and the tendons left hanging. A circular opening over an inch in diameter, with a charred margin, was found a little to the right and above the umbilicus. Posteriorly there was an almost linear wound of exit below the last rib on the right side. On the left thigh and leg there were several charred wounds of varying extent and depth, while on the right thigh there were two deep wounds extending nearly to the femur, one in front and one on the outer side over the trochanters, which must have been very nearly on the opposite side of the body from the bomb. In this latter wound a piece of metal was found. As a rule, no pieces of metal were found in the wounds, but many bits of clothing.

On opening the abdomen some intra-peritoneal hemorrhage was at once seen. This was due to great contusion and laceration of the right lobes of the liver, especially of the quadrate lobe and the adjacent part of the right lobe from the velocity of the air surrounding the bomb rather than to the metal itself. The gall-bladder had escaped injury. None of the intestines at this stage appeared to have been damaged, but on the removal of the peritoneum it was at once found that there was a large amount of retro-peritoneal hæmorrhage.

¹ Lancet, February 24, 1894.

rhage. Careful examination showed that the second part of the duodenum had been ruptured on the right side for rather more than an inch, and that the anterior surface of the right kidney was extensively lacerated. All the other abdominal viscera, including the stomach, which contained food, and the other portions of the intestine, were uninjured. The thoracic viscera and brain were quite normal.

THE FOREIGN QUARANTINE OF IMMIGRANTS.

In an editorial upon the request of the United States delegates to the International Sanitary Conference, that proper means be taken by European governments to prevent cholera and other infectious diseases from being brought to this country, the *Lancet* says:

"Precautions should be enforced, if not on the American side, then at the point of departure. The latter is the solution of the difficulty which the American Government desires to submit to the European Powers. In the name of humanity and of good neighborly feelings, care should be taken not to ship over to America infected clothing or persons likely to convey infectious or contagious diseases; but, if this principle does not suffice, then, even from selfish motives, the European Governments should act in the manner desired. A great deal has been said about the pilgrimages to Mecca, and it has been urged that, in English ships alone, as many as 20,000 pilgrims have been taken to Mecca in one single season; but this is nothing when compared to the 400,000, or so, immigrants who yearly go over to America. This great current of humanity travelling through Europe on its way to the New World exposes Europe itself to considerable danger, and it would be to the latter's interest if these immigrants were forced to observe laws imposing cleanliness, etc., from the moment that they commence their journey. Then, when finally the immigrant reaches his ship, he is stowed away in an over-crowded steerage, where the most unsanitary conditions prevail. The pilgrims to Mecca are not worse off than the steerage passengers to America; and the sanitary regulations of the pilgrim ships will be better in themselves and better applied than are those governing the steerage passengers to America. If considerable improvement in this respect is not enforced, the European Powers will be the losers, because quarantine will be imposed on ships arriving in America, and this will not only injure the passenger traffic but also the exportation of merchandise to the United States."

IN MEMORIAM.—JOEL SEAVERNS, M.D.

At a meeting of the Roxbury Society for Medical Improvement March 22, 1894, the following resolutions in regard to the late Dr. Joel Seaverns were passed:

Whereas, Through the wisdom of our Heavenly Father, our friend and associate, Dr. Joel Seaverns, has been called to a higher sphere of duty,

Resolved, That in the death of Dr. Seaverns this Society has lost one of its most valuable and honored members, and one whom we shall sadly miss at our meetings for medical improvement and social converse.

Resolved, That the Roxbury Society for Medical Improvement tender to Mrs. Seaverns and family, their cordial sympathy in the sad bereavement and loss of the dear and loving husband and kind and affectionate father.

Resolved, That a copy of these resolutions be forwarded to Mrs. Seaverns, by our Secretary, and that the same be inscribed on the records of the Society, and that a copy be published in the *Boston Medical and Surgical Journal*.

A. B. COFFIN, Secretary.

Correspondence.

AMERICAN MEDICAL ASSOCIATION.

SAN FRANCISCO MEETING.

SAN FRANCISCO, March 14, 1894.

MR. EDITOR:—San Francisco is a comparatively new city, but it is not lacking in places of interest to the visitor. About a half-mile to the northward of the city limits, nestling in a little valley and surrounded by evergreen trees, is the Presidio, the United States Army Station. A short distance beyond is old Fort Point, upon the water's very edge; the waves of the bay, dashing upon its cement abutments are broken into spray and lost upon its walls. McDowell Avenue leads from near the fort, around the top of the cliffs, overlooking the Golden Gate and the broad expanse of the Pacific Ocean. Vessels of all nations and descriptions can be seen in the offing or quietly gliding through the waters of the gate.

The Cliff House—a famous resort—is situated upon a promontory directly overlooking the ocean. In the distance, on a clear day, the Farallone Islands—twenty-five miles away—are seen rising abruptly from the water; while less than one hundred yards from where one stands, the Seal Rocks jut up from the waves and the loud barking of the seals and sea-lions upon them tells why they are so named.

Sutro Heights are just above the Cliff House. Here nature and art have so blended their works that the visitor is truly astonished and delighted with what he sees. The committee of arrangements are planning an entertainment at this place for the wives and daughters of visiting members of the Association. All San Francisco is justly proud of Golden Gate Park. What was once dreary sand dunes, has been transformed into a very garden, flowers bloom throughout the year, and the grasses are always green. Broad avenues wind in and out past the conservatory, the deer paddock, around the base of Strawberry Hill and on to the ocean beach.

The California Mid-Winter Fair is being held in the Park, at the base of Strawberry Hill, and occupies a space many acres in extent. This fair has an individuality peculiarly its own, and offers much of interest to every visitor.

R. H. PLUMMER, M.D.

Chairman Committee of Arrangements.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 18, 1894, TO MARCH 23, 1894.

So much of Par. 8, S. O. No. 60, March 12, 1894, from A. G. O. as relates to FIRST-LIEUT. HARLAN E. MCVAY, assistant surgeon, is amended to direct him, on being relieved from duty at San Carlos, Arizona, by FIRST-LIEUT. STRAUB, assistant surgeon, to report in person to the commanding officer, Fort Huachuca, instead of Whipple Barracks, Arizona Territory.

MAJOR HENRY M. CRONKHITE, surgeon, U. S. A., is relieved from duty at Fort Clark, Texas, and ordered to report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post, relieving CAPTAIN WM. C. GORGAS, assistant surgeon.

CAPTAIN GORGAS, on being thus relieved, will report to the commanding officer, Fort Barrancas, Florida, for duty at that post, relieving FIRST-LIEUT. ROBERT S. WOODSON, assistant surgeon.

FIRST-LIEUT. ROBERT S. WOODSON, assistant surgeon, on being relieved by CAPTAIN GORGAS, will report in person to the commanding officer Fort McIntosh, Texas, for duty at that post and for field duty in the Department of Texas, relieving FIRST-LIEUT. BENJAMIN L. TEN EYCK, assistant surgeon.

FIRST-LIEUT. TEN EYCK, on being thus relieved, will report to the commanding officer, Fort Clark, Texas, for temporary duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 24, 1894.

B. S. MACKIE, surgeon, ordered to the U. S. Receiving-ship "Franklin."

W. C. BRAISTED, passed assistant surgeon, from Naval Hospital, New York, and to the U. S. S. "Columbia."

S. G. EVANS, passed assistant surgeon, from the Naval Hospital, Philadelphia, and to the Naval Hospital, New York.

W. G. FARWELL, surgeon, ordered to the U. S. S. "Columbia."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING MARCH 17, 1894.

FESSENDEN, C. S. D., surgeon. Detailed as chairman, Board for physical examination of Assistant Surgeon L. E. Cofer. March 6, 1894.

PURVIANCE, GEORGE, surgeon. Detailed as chairman, Board to inspect Reedy Island Quarantine. February 20, 1894. To report at Bureau for temporary duty. March 2, 1894.

HUTTON, W. H. H., surgeon. Detailed chairman, Board for physical examination of Inspector of Hulls. March 9, 1894.

GASSAWAY, J. M., surgeon. Detailed as recorder, Board for physical examination of Assistant Surgeon L. E. Cofer. March 6, 1894.

GODFREY, JOHN, surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Marine Service. March 6, 1894.

IRWIN, FAIRFAX, surgeon. To proceed to Paris, France, for special duty. February 24, 1894.

MEAD, F. W., surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Marine Service. March 10, 1894.

CARTER, H. R., surgeon. To report at Bureau for special duty. March 14, 1894.

BANKS, C. E., passed assistant surgeon. To proceed to Portsmouth, N. H., as inspector. March 12, 1894.

KALLOCH, P. C., passed assistant surgeon. Granted leave of absence for thirty days. March 12, 1894.

GLENNAN, A. H., passed assistant surgeon. Detailed as member, Board to inspect Reedy Island Quarantine. February 20, 1894.

WASDIN, EUGENE, passed assistant surgeon. Granted leave of absence for sixteen days. March 3, 1894.

KINYOUN, J. J., passed assistant surgeon. To report to chairman, Committee on Ventilation and Acoustics, House of Representatives, for special duty. February 21, 1894.

WOODWARD, R. M., passed assistant surgeon. To report at Bureau for special duty. March 14, 1894.

GUITERAS, G. M., passed assistant surgeon. Granted leave of absence for twenty days. February 19, 1894.

STIMPSON, W. G., assistant surgeon. Granted leave of absence for twenty-five days. March 5, 1894. Detailed as recorder, Board for physical examination of Inspector of Hulls. March 9, 1894.

HOUGHTON, E. R., assistant surgeon. Ordered to examination for promotion. March 3, 1894.

ROSENAU, M. J., assistant surgeon. Ordered to examination for promotion. March 6, 1894.

COFER, L. E., assistant surgeon. To report to Board for physical examination. March 6, 1894. Placed on "waiting orders." March 15, 1894.

GARDNER, C. H., assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Marine Service. March 10, 1894.

STEWART, W. J. S., assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Marine Service. March 10, 1894.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—The annual meeting will be held at 19 Boylston Place, on Monday, April 2, 1894, at 8 o'clock.

Readers: Dr. C. H. Hare: "An Ovarian Dermoid Discharging through Bladder for Three Years before Operation and Cure." Discussion by Dr. W. H. Baker and Dr. W. F. Whitney.

Dr. Charles Harrington: "Massachusetts Laws Relating to the Sale of Foods; their Enforcement."

Election of officers for ensuing year.

Election of honorary and associate members.

Report of auditing committee.

JOHN C. MUNRO, M.D., Secretary.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.—The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place on Wednesday evening, April 4, 1894.

Dr. E. W. Cushing will present a paper upon "Abdominal Drainage." Dr. M. H. Richardson and others will take part in the discussion.

Dr. F. G. Balch will report "Cases of Compound Fracture of the Ankle."

CHARLES L. SQUDDER, M.D., Secretary, 1 Marlborough St.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.—The fifth annual meeting of the Association of American Medical Colleges will convene at Maple Hall, Grand Pacific Hotel, San Francisco, Cal., at 3 o'clock P. M., Wednesday, June 6, 1894. Action will be taken at this meeting upon several proposed amendments.

N. S. DAVIS, M.D., LL.D., President.

PERRY H. MILLARD, M.D., Secretary.

MEDICAL ASSOCIATION OF GEORGIA.—The forty-fifth annual session of the Medical Association of Georgia will meet in Atlanta, Ga., on April 18th, 19th, 20th.

W. H. ELLIOTT, M.D., President, Savannah, Ga.

DAN H. HOWELL, M.D., Secretary, Atlanta, Ga.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, April 4th, at 8 o'clock, by Dr. F. C. Knapp. Subject, "Traumatic Nervous Affections." Physicians are cordially invited.

RECENT DEATHS.

JOHN H. RAUCH, M.D., of Chicago, died suddenly in Lebanon, Penn., March 24th. He was a well-known authority on sanitation and medical education. He organized the Board of Health of Chicago, and was President and Secretary of the Illinois State Board of Health from its organization to 1891. He was a delegate to the International Medical Association at Berlin in 1890, and to the Pan-American Medical Congress in the City of Mexico. During the war he was brigade surgeon under General Augur, assistant medical director of the Army of the Potomac, and medical director of the Gulf Department of the Nineteenth Army Corps.

ERNEST HENRY JACOB, M.D., Professor of Pathology in Yorkshire College, died of acute arachnitis in Leeds, England, on February 28th, aged forty-four years.

AUGUSTE OLLIVIER, M.D., died recently in Paris, aged sixty-one years. He was a member of the Academy of Medicine and physician to the Vichy and St. Louis Hospitals, and to the Enfants Malades. His various writings have been of considerable value, especially his "Leçons Cliniques sur les Maladies des Enfants."

BOOKS AND PAMPHLETS RECEIVED.

Verbrechen und Walsinn beim Weibe, Statistische, Klinische und anthropologisch-biologische Untersuchungen. Von Dr. P. Nücke-Hubertsburg. Abdruck.

A Text-book of the Diseases of Women. By Henry J. Garrigue, A.M., M.D., Professor of Obstetrics in the New York Post-Graduate Medical School and Hospital, etc. Containing three hundred and ten engravings and colored plates. Philadelphia: W. B. Saunders. 1894.

Clinical Lectures on Pediatrics, delivered in the Vanderbilt Clinic during the Session of 1892-93. By A. Jacobi, M.D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons of New York, etc. Stenographic reports. Reprint. 1893. New York: Bailey & Fairchild. 1893.

An Illustrated Encyclopædic Medical Dictionary, being a Dictionary of the Technical Terms Used by Writers on Medicine and the Collateral Sciences in the Latin, English, French and German Languages. By Frank P. Foster, M.D. Vol. IV, with illustrations. New York: D. Appleton & Co. 1894.

A Text-Book on Diseases of the Eye. By Henry D. Noyes, A.M., M.D., Professor of Ophthalmology and Otology in Bellevue Medical College, etc. Second and revised edition, illustrated by five chromo-lithograph plates, ten plates in black and colors, and 269 wood-engravings. New York: William Wood & Co. 1894.

First Aid in Illness and Injury, Comprised in a Series of Chapters on the Human Machine; Its Structure; Its Implements of Repair and the Accidents and Emergencies to Which it is Liable. By James E. Pilcher, M.D., Ph.D., Captain in the Medical Department of the United States Army. Revised edition with 176 illustrations. New York: Charles Scribner's Sons. 1894.

Original Articles.

EXERCISE IN THE TREATMENT OF LATERAL CURVATURE.¹

BY E. G. BRACKETT, M.D., BOSTON.

THE use of exercise is one of the means to be employed in the thorough treatment of lateral curvature, and varies in its object with the case, and character and degree of curve. It must be remembered that all degrees of severity are found, from those light postural cases in which there is no actual distortion, but in which the condition is one of malposition only and self-correction can be easily assumed, to those severe forms of fixed and rigid curves in which there is marked structural change both in the bone and in the softer parts, and in which no degree of force which can be borne by the patient is able to immediately bring about the full correction of the deformity. The treatment in the different cases will differ in the methods and the means employed; but the object of the treatment in all cases is essentially to increase the flexibility of the spine and the trunk, to hold the patient in a corrected position, and to improve the general muscular condition. The employment of exercise, in its object and in the method of its application, will vary necessarily according to the object of the treatment and the stage in which it is used. In most of the severer forms of lateral curvature, the most important element in the treatment is to increase the flexibility of the spine, to make a better attitude on the part of the patient possible. To attain this, obviously something more than exercise on the part of the patient is required, such as the mechanical correction, and in this stage of the treatment the use of exercise is an accessory part to this one of mechanical force. In the later treatment of lateral curvature the object of exercise is to improve the muscular condition, and to enable the patient to hold himself in a correct attitude. In those lighter forms in which the forcible correction is not necessary, the employment of exercise has a more prominent part.

The question of mechanical correction is not here considered. The employment of gymnastics will receive separate consideration, as to whether it is used as an aid to mechanical correction to increase the flexibility of the spine, or as a means of muscular training and development.

With reference to the character of the exercises, they may be classed as active and passive; the former including those in which treatment is performed purely by the aid of muscular exertion, aided only by the gravity of the body, and the second those in which this is either supplemented or substituted by additional force, used either by mechanical means or by an assistant.

The passive are included under the head of mechanical correction, and are, therefore, not considered here.

The active may be further classified with reference to the object for which they are used, whether for the increase of flexibility of the spinal column, or for the improvement of general muscular condition, and they will be considered under those heads.

Increase of Flexibility.—Exercises of this character have the same object as the passive mechanical correction, that is, the stretching of contracted structures in

such a way as to lessen the obstacles to correction of the deformity. These, in the main, consist of forcible bending and twisting of the spine in such ways that the force will be exerted against the distortion. Precaution is needed in this exercise that no such movements are employed which in any way tend to increase the flexibility of the spine in the direction of the concavity, and second, that all such motions are avoided which tend by themselves to the crowding together of the already distorted vertebral bodies, forcing them still further from the vertical line, and thus increasing the rotation which accompanies the lateral deviation. As the plane of the bodies of the vertebrae are carried farther away from the vertical line than is the axis of rotation, during flexion of the spinal column they are crowded together and are forced still farther away from the median line, thus increasing the rotation. This fact is made use of frequently in the examination, as when the patient is told to bend forward, which exaggerates the amount of rotation at first apparent. The opposite of this is equally true as seen in the diminution in the degree of rotary curve during suspension and during recumbency. In the same way that the pushing together of the vertebrae increases the rotation, the forcible stretching tends to pull them into the median line, and if this motion is carried still further by a backward bending, the force toward the correction of the rotation is still greater. For this reason all exercises which allow a forward bending of the spine are to be avoided, and those which tend to increase the backward flexibility should be encouraged.

Care is also necessary in those cases of double curve, that exercises directed toward the increase of the flexibility in one part of the spine shall not result in bending of the concavity in the other. Such particularly being the case with those asymmetrical movements in which the trunk is carried to one side, either in the standing position or by leaning over the side of a table or a roller. As the spine bends much more freely in the region of the concavity than of the convexity, unless great care is used when the effort is made, or when pressure is brought to bear upon the convexity of the curve, in all those motions where the whole trunk is involved the spine invariably moves more in the concavity than in the convexity. If this is allowed to happen, it obviously counteracts all the good that may come from the pressure or the force which may be used upon the convex portion.

This class of exercises is intended either to increase the backward flexibility of the spine and thus indirectly to improve the rotation, or is directed to the rotation itself. The first, or those for backward flexibility of the spine, are performed both when the patient is recumbent, and when the influence of the superincumbent weight is removed, and we have the force of muscular action only; and, second, those in which the patient is suspended, but in which we have not only a partial removal of superincumbent weight but also the force of direct traction; and, third, those in which the patient is standing, but in which either additional force or simply the weight of the body is used as a means to increase the amount of backward bending. The first of these are employed while the patient is lying prone, and the effort is made to forcibly raise the head and shoulders from the couch by muscular action alone. These are varied and made more forcible by bending backward over a padded surface, which is placed at the point where the greatest increase of amount of motion

¹ Read before the Boston Society for Medical Improvement, January 22, 1894.

is required while the patient is lying on the back, and allows the head and shoulders to fall downwards over the end of the couch. These are either done alone, or at first with the aid of an assistant in case the patient's strength is not sufficient.

In the second series of these exercises, in which the patient is suspended or partially suspended, the weight should be equally divided between the head and the arms, that is, the rope from the head-sling should pass over a single pulley and return to the handle which the patient grasps. If a compound pulley is used, then the amount of force used upon the head is relatively increased in proportion to the number of pulleys, and too great force upon the head and neck may be used. The object of the suspension is to exert a stretching force on the spinal column, and the suspension should be so performed that the force shall be expended as directly as possible on the contracted structures.

The third series consists of body movements, comprising bending and torsion of the trunk, and which bring the strain from the body weight and muscular action on the convexity of the distortion. These are taken in part alone, and in part with such assistance as will enable them to exert increased muscular action, as from straps and bars properly arranged for the direction of the pull, or by the hands of an assistant.

Exercises for the Improvement of the General Muscular Condition. — The object of exercise used with this purpose is to train the patient to maintain a more normal attitude, and by this training to make this position habitual. This is practicable only for those curves which have, by the other means, been made flexible and thus a corrected position possible, and in the light postural cases in which correction has always been possible. In the large majority of non-paralytic cases, the amount of asymmetry in strength is not great, at least not appreciable to practical tests; and for this reason special exercises for weak muscles do not play a prominent part. The matter of unequal use of muscles is one of greater importance; and such exercise is rather to the training of such use of the muscles, that the patient at first with effort can, and later will, maintain this corrected attitude without effort and unconsciously. The matter of aids to this by apparatus to prevent the patient from assuming injurious attitudes, both in standing and sitting, is important, but will not here be considered.

These exercises may be placed under three groups: (1) for correction of round shoulders; (2) for self-correction; (3) exercises in the corrected position. No attempt is made to enumerate the individual exercises used for these purposes, as this would open a subject of itself too large for the scope of this paper, but rather to consider the object of the various forms, and the conditions under which they may be used.

In the large majority of these cases of spinal distortion, there is found the condition of round shoulders, frequently associated with a pushing forward of the neck and head; and the early correction of this is important in thorough treatment. Like exercises that tend to increase a forward bending of the spine, the position of round shoulders exerts a force which is detrimental to the improvement of the rotation. When the curve and the rotation of the spine are in the upper part of the trunk, the forward movement of the shoulders tends to push backward the spine in such a way that the rotation of the vertebræ are increased. As the chest becomes more fully developed, and the

shoulders are carried and forced backward, the result is the same as in those exercises which tend to increase the backward flexibility of the spine. Many of these cases present a condition of decided rigidity, in which instance the treatment must be directed towards increasing the flexibility of the spine in this region, until correction becomes easy.

By exercise for self-correction is meant those movements in which the attempt is made by the patient's voluntary effort alone to assume a corrected position. In this, the patient may either stand erect, or be aided by such a position of the arms as will allow greater ease and more perfect correction, as, for instance, by the effort of the sense of raising and pushing with the shoulders or head, with the hands on the hips or clasped behind the neck; but no general rule can be laid down, as each case must be studied with reference to this by itself. In this effort, a marked improvement in the position is possible, while its value is manifest by the greater ease in assuming and maintaining this position, and, after practice, in the nearer approach to the complete correction. As an exercise this position is held for an increasing length of time during the regular hours of gymnastic work, and the effort made at all times during the day.

An additional force that can often be employed with very excellent results is gymnastic work in the corrected attitude. Bernard Roth has insisted on the value of maintaining this, which he has called the key-note position; and its value lies in its training one to perform body movements while the spine is held as far as possible in the corrected position. The key-note position may be one which has been found best through the effort of self-correction, or by the varied positions of the arms and the plane of the pelvis; or the exercises may be taken with the patient recumbent, and a more complete position of correction obtained by the addition of mechanical force pressure. The advantage of muscular work in the corrected position, maintained in any way, is obvious. After it has become easily possible to assume an attitude of self-correction, it is difficult to maintain the correction when any movement is attempted. By holding this position during gymnastic exercise, this same self-correction is maintained with greater ease during the day, and becomes more nearly habitual.

PATHOLOGY OF DIABETES MELLITUS.*

BY ELLIOTT P. JOSLIN, A.B., P.H.D.

(Concluded from No. 12, page 312.)

Experimental Work. — The experimental work of Herr von Mering and Herr Minkowski,⁸ on the production of diabetes by pancreatic extirpation, forms one of the foremost chapters in all experimental pathology. It is about two hundred years since Wirsung gave his name to the pancreatic duct. The pancreas must have excited a good deal of interest at that time, as we find Regnier de Graaf²² and Conrad Brunner²³ trying to extirpate it. They thought that their attempt was successful, and published two articles, in which the medical fraternity was informed in Latin that the removal of the pancreas was provocative of no results. Their word was accepted — or forgotten; and I find no further mention of the subject until Claude Bernard attempted to produce a diabetes by plugging the duct

* Read before the Boylston Medical Society of the Harvard Medical School, November 17, 1893.

of Wirsung, and failed. In 1889 von Mering and Minkowski began their work on the subject, to which they have added from time to time ever since. Many investigators have confirmed their work, but none have essentially added to it.

The technique of the removal of the pancreas is no mean piece of surgery. The gland is difficult to get at, the blood-supply is free, and it has an intimate connection with the surrounding parts. The total removal is essential for the success of the experiment, and it is in this particular that so many have failed. So carefully has Minkowski conducted his operations that in not a single instance did he leave even a small part of the pancreas in the abdomen. Peritonitis is one of the greatest bugbears to the operation. After full extirpation, first intention is seldom obtained, though this was obtained in partial removal of the gland. The experiments have been conducted on dogs. Cats are difficult to experiment upon, and the pancreas of rabbits cannot be successfully removed. Good results come from the extirpation in swine, but in birds and frogs the returns are not so satisfactory.

When a healthy dog is deprived of the pancreas he is attacked invariably within twenty-four hours with glycosuria, which continues for some weeks without interruption up to the death of the animal. On the first day after the operation the urine contains one per cent., or less, of sugar; on the following day the percentage has risen to four or six; and on the third day it has reached eight, ten, or even more. If no food is taken, the sugar begins to diminish; but after seven days of starvation it does not fully disappear. The amount of sugar decreases when the animal becomes very weak, and at some time before death may wholly disappear from the urine. In two of Minkowski's cases this occurred. "The diminution in the amount of sugar excreted in no way corresponds to an improvement, but rather to a worse state of the conditions of nutrition." Peritonitis and septic processes may lead to a disappearance of the sugar. If carbohydrates are taken, the amount of sugar rises rapidly, and the sugar ingested is practically wholly excreted. The urea stands to the sugar in the ratio of two to three, when the dog is on a pure flesh diet; and this ratio is maintained with very slight variations through all the vicissitudes of the experiment. Thirst, polyphagia and polyuria are constant accompaniments of the glycosuria; and the emaciation, feebleness and the slow healing of the wound all show that the animal is suffering from a severe diabetes mellitus.

Von Mering and Minkowski have further reported that after a partial extirpation of the pancreas a diabetes was not produced. To this fact they attach much importance. They think this explains the non-appearance of glycosuria in man in some pancreatic lesions. A part of the gland can perform the function of the whole. Furthermore, this answers the objection which has been raised that the diabetes was due to nerve lesions caused in the operation. In the removal of a large portion of the gland, for example, four-fifths, the same nerve lesions would be committed as in the removal of the whole gland. Just how much of the gland must be left in the abdomen to prevent diabetes cannot definitely be stated. The nutrition of the part left behind here enters into the problem. In some of the instances where a portion of the gland is removed, a diabetes of light grade is produced. This is present only when the animal is on a carbohydrate diet; and

it is supposed that slight glycosurias in man might be attributable to some moderate disturbance of the pancreatic function.

The abdominal grafts of the pancreas are by far the most striking part of Minkowski's and von Mering's work. This was suggested by Schiff's work on the thyroid. The art of the experimenter is here given full range. The pancreas is a fragile organ and quickly dies. Moreover, an animal which has submitted to an operation on the gland is in great danger of peritonitis. Both obstacles were overcome in the following manner. The pancreas was carefully dissected from its attachments in the abdominal cavity, turned on its axis and stitched to the abdominal wall. The blood-supply was disturbed as little as possible. The wound was allowed to heal, and gradually the pancreas became engrafted on its new surroundings. When this was firmly established the dog was submitted to another operation, in which the internal part of the gland was removed. On the recovery of the animal no diabetes resulted. After an interval of some time, the engrafted pancreas was removed; and when this was done, diabetes in all its forms appeared. What more striking proof could be asked for the action of the pancreas in producing diabetes?

The removal of the graft with its sequence of diabetes throws aside completely the theory that in these cases nerve lesions are the cause of the disease. The blood-supply of the graft, in some cases from the abdominal parietes, in others from the aorta alone, excludes any theory which ascribes the prevention of the diabetes to the different blood-supply the gland might receive.

No connection exists between the intestinal secretion of the gland and its functions in the prevention of glycosuria. Minkowski has observed the absence of the ordinary secretion and yet no diabetes, while Thiroloix²⁴ has seen a diabetes come on when the secretion was active.

Is this function whose disturbance leads to the production of diabetes a specific property of the pancreas?

Minkowski concludes that it is, else why should diabetes appear on its extirpation? Various authors have thought differently. Renzi and Reale²⁵ found sugar in the urine after the removal of the salivary glands. Minkowski has carefully gone over their work in his own laboratory and finds (1) that the glycosuria was usually slight in intensity, (2) that it was transitory, and (3) that it was not even a constant result of such extirpation. And as for the work of the same authors on duodenal extirpation, much the same conclusions were reached which Weintraud²⁶ has further confirmed.

Falkenberg, after removal of the thyroid, obtained a glycosuria in 13 out of 20 cases. Gley²⁶ and Minkowski agree in thinking this glycosuria due to traumatism.

It may be well to definitely state that the removal of the gland so that all intestinal secretion is cut off brings on no diabetes. A transitory glycosuria may result from the abdominal operation.

Minkowski's experiments of total extirpation, partial extirpation and grafts of the pancreas have been confirmed by Hedon,²⁷ Thiroloix²⁸ and Abelman.²⁹ Lepine³⁰ in 100 pancreatic extirpations, and Sandmeyer³⁰ in 29, have come to the same result.

How does removal of the pancreas cause diabetes mellitus?

Minkowski does not say, but simply states the two

theories which are advanced, and points out that there are further channels for experimental work which when traversed will enable us to have a clearer insight into the question.

The first of the two theories at present most advocated is that there is a ferment in the blood which destroys the sugar. This ferment is furnished by the pancreas, disease or removal of which causes a heaping up of the sugar in the blood, due to the non-assimilation of the sugar by the tissues. The other theory implies a poison in the blood, which in the normal person is destroyed or rendered inactive by the pancreas; removal of this gland allows an accumulation of the poison and grave nutritional disturbances.

Lepine²¹ was a fellow-worker with Dr. H. P. Bowditch, who has spoken highly of him to me as a scientist. He discovered that the normal pancreas when treated with a little water made alkaline was able to destroy a small quantity of sugar. The blood of an animal deprived of its pancreas lost less sugar than the blood of a sound animal; and hence Lepine concluded that the pancreas yielded to the blood a ferment which contributed powerfully to the destruction of the blood sugar. This ferment he called the glycolytic ferment. He found that the blood of the portal vein was richer in this ferment than that of any other part of the body, and after an elaborate series of experiments proved that this ferment was contained in the white blood-corpuscles. This ferment is diminished, he has shown, in the blood of diabetic persons to the number of seven; and, in fact, in all cases in which there is an increased amount of sugar in the blood the ferment is present in less than the normal quantity.

Writers on diabetes speak favorably of Lepine's theory, but most of the experimenters have not yet accepted it. This theory of Lepine's necessitates the view that glycosuria results from the lack of the power of assimilation of the sugar by the body. Hedon²² and Seegan²³ also consider that the lack of assimilation of the sugar is the cause of diabetes.

RECENT WORK OF CHAUVEAU.²⁴

Chauveau was a fellow experimenter with Claude-Bernard. He has done much eminent work in time past, and the field of experimental diabetes is well known to him. Two articles which he has recently published connect the work of Claude-Bernard and that of Minkowski. In his first memoir he proves that diabetes is due to an increased production of sugar by the liver. In a normal animal the blood in the hepatic veins contains the most sugar of any blood in the body. The sugar in the arterial blood always is greater in amount than that in the venous. Claude-Bernard has shown the formation of this sugar to be the property of the liver, and Chauveau has made clear that the destruction of the sugar takes place in the tissues. Somewhere in the capillaries between the red arterial and dark venous blood the sugar is lost. If this sugar continues to be lost in an animal rendered diabetic, we can feel sure that the cause of the diabetes rests on the overproduction of sugar and not on its lack or destruction.

So Chauveau produced diabetes in animals by traumatism, by puncture of the fourth ventricle, by section of the cord just below the medulla and by removal of the pancreas. In each instance the analysis of the arterial and venous blood showed the normal excess of

sugar in the former. It is well known that a section of the spinal cord from the last few cervical to the sixth dorsal vertebræ produces a diminished amount of sugar in the blood; but when this section was made, the arterial remained richer in sugar than the venous blood. His experiments confirmed his theory that diabetes is due to an increased production of sugar. This work was preliminary to his next article.

We know that sugar is formed in the liver. Is it formed anywhere else? The muscles remove the sugar from the blood, which they use dehydrated in the form of glycogen. There is no reason why these, like the liver, should not convert this glycogen back into sugar, but no proof of this has ever been given. Furthermore, if the muscles did do this, we should expect to find more sugar in the venous blood than in the arterial, but Chauveau's previous work has shown that this is not so. The liver, then, is the source of the increased sugar in the blood—hypoglycémie—in diabetes; and if we can explain the mechanism by which the liver brings this about, we can explain the disease.

For a long time it has been known that puncture of the fourth ventricle would produce a passing glycosuria, and lately von Mering and Minkowski have shown that removal of the pancreas will cause the same result. Various clinical facts also go to show that the pancreas is connected with the production of diabetes. And this leads us to consider the pancreas in a new light as a moderator of the glycaemic function of the liver. Now in diabetes there is besides the glycaemia a destruction of the tissues going on throughout the entire body. The losses of the body surpass its gains. Katabolism is the ruling feature, and from the products resulting from the katabolism part of the sugar is formed in the liver. This we know because diabetic animals which are starved still continue to secrete sugar. But how does the pancreas act to prevent this destruction of tissue and subsequent formation of sugar in the normal state? As the veins of the pancreas empty into the vena porta, it is natural to explain this influence of the pancreas upon the formation of sugar in the liver by supposing an internal secretion of the gland which empties into the blood, by which it is carried to the liver and participates in its functions. However, as yet experiment has given no proof of the direct action of this pancreatic secretion on the liver. The facts already known, with what Chauveau adds later, tend to show that this action is through the agency of the nervous system.

The functions exercised by these two glands depend without doubt upon their inherent properties, but the nervous system cannot fail to regulate their action. Glands have been shown to have excito-secretory nerves—compare the submaxillary gland and the chorda tympani—and there is no reason to suppose that the pancreas and the liver are exceptions. In fact the teachings of physiology would impose upon us the consideration of the existence of excito-secretory and inhibito-secretory nerves of the liver. Indeed, study of nervous action on the liver has been made; but Chauveau combines the former experiments with pancreatic extirpation.

When a section of the spinal cord at its junction with the medulla was made on starving dogs, hypoglycémie resulted as after the extirpation of the pancreas and this hypoglycémie was attended with glycosuria. These common symptoms lead us to draw a

connection between the result obtained on bulbar section and pancreatic extirpation, and to conclude that in both instances the animal is subjected to the same influence; in one, pancreatic secretion is rendered impossible by removal of the pancreas; in the other, it is made quite as impossible by paralysis of the gland. From the effects thus produced by bulbar section we can conclude that the pancreas is thereby isolated from its excito-secretory centre, whence suppression of the internal secretion and subsequent hypoglycémie. But this section did not injure the excito-secretory centre of the liver; on the contrary, it became more active, which would imply that it was not antagonized. The following deductions then can be drawn from bulbar section: (1) the action of the pancreas on the glucose-forming function of the liver appears to be under the control of a centre which excites the internal secretion of the pancreas; (2) this centre is situated at some point above the junction of the cord and medulla; (3) the sugar-forming function of the liver is controlled by an excito-secretory centre which is situated in some region of the spinal cord; (4) the action of the pancreas upon the liver is exercised upon the excito-secretory centre of the liver and not on the liver itself.

Puncture of the fourth ventricle causes much the same train of phenomena as does the section of the cord at its junction with the medulla. In bulbar section the animal of course dies because his life is dependent on artificial respiration. In medullary puncture respiration is not disturbed. The identity of the results leads us to consider that in sugar-puncture of the fourth ventricle the excito-secretory function of the pancreas is for the time deranged. This leads up to the conclusion that this centre is no higher up in the nervous system than the medulla, and the section between the spinal cord and medulla has shown that it is no lower.

This production of glycosuria by bulbar section can also be explained on the hypothesis that there is an inhibito-secretory centre of the liver in the medulla, which by the operation is shut off from its influence on the liver. The internal secretion of the pancreas then would stimulate the inhibito-secretory centre and moderate the excito-secretory, while its absence would produce just the opposite results and hypoglycémie would appear. The lighter glycosuria which appears on bulbar section could then be explained by the pancreas acting to a slight extent, though removed from its excito-secretory centre. Having thus set forth the theory, Chauveau proceeds to the more original part of his work.

When a section of the cord is made between the fourth cervical and sixth dorsal pairs of nerves, a hypoglycémie is produced. Evidently this is due either to increased action of the inhibitory centre or paralysis of the excitatory. The second alternative conforms more easily to the facts. Now as this paralytic effect ceases when we go above the fourth cervical pair, and we then get hypoglycémie, it is evident that the excito-secretory centre of the liver is in the neighborhood of the fourth cervical pair. The section between the fourth pair cervical and sixth pair dorsal is then explained by this section severing the communication of the excito-secretory centre with the liver. It can furthermore be deduced that the inhibitory fibres of the liver pass out of the cord above the fourth, or else the hypoglycémie would not result from section below that point.

When a section between the fourth cervical and sixth dorsal is followed by removal of the pancreas, instead of getting a hypoglycémie with the symptoms of diabetes which are ordinarily obtained on removal of the pancreas, Chauveau found a condition of hypoglycémie, and following the theory as detailed above, the explanation is easy. The connection between the liver and its excito-secretory centre having been severed, the removal of the pancreas could not produce its ordinary effects.

When suppression of the pancreas is followed by section of the cord between the fourth cervical and sixth dorsal, from the previous work we should expect that the symptoms of diabetes would cease when the latter part of the operation was performed; but no such result awaits the experimenter. The hypoglycémie continues. The reason can be found in the sympathetic ganglia which lie in the track of the nerves. These act as relays to the central nervous system; and from these nervous impulses are sent forth, only these are dependent in character upon the primary impulse which is received from the higher source. They continue to act in the same way even though separated from their centres in the central nervous system. So when the cord was cut between the fourth cervical and sixth dorsal, the ganglia were left under the control of the inhibitory centre, and subsequent removal of the pancreas had no effect.

These experiments are further varied by substituting the bulbar section for removal of the pancreas, and the same results are obtained. Thus, section of the cord between the fourth cervical and sixth dorsal, followed by section at juncture of medulla and cord, produces no hypoglycémie. The hypoglycémie is produced and not diminished, however, when the section below the medulla is followed by section of the cord between the fourth cervical and sixth dorsal. Thus, in these experiments the isolation of the excito-secretory centre of the pancreas (or what we can consider as connected with it, the inhibito-secretory centre of the liver) acts in the same way as does removal of the gland itself. A section just below the medulla, combined with removal of the pancreas, makes no greater hypoglycémie than does simple removal of the gland.

To recapitulate Chauveau's theory: Diabetes is due to an excessive production of sugar by the liver. This production is regulated by the internal secretion of the pancreas, which acts upon the liver through its excito-secretory and inhibito-secretory nerves. The excito-secretory centre is in the cord near the origin of the fourth cervical pair. The inhibito-secretory centre is in the medulla. The internal secretion of the pancreas acts on these so as to stimulate the inhibito-secretory centre and moderate the excito-secretory centre. Removal of the pancreas does the reverse, and brings on hypoglycémie. Section just below the medulla cuts off the action of the inhibitory centre, and hypoglycémie results. Section of the cord between the fourth cervical and sixth dorsal allows the inhibito-secretory but not the excito-secretory centre to act — whence hypoglycémie. These centres act through ganglia, which, once excited, keep on originating impulses of a similar nature unless they receive an excitation of an opposite character. The removal of the pancreas has the same action on these ganglia as does the section at the junction of the cord and medulla. "The close connection between the effects of depauperization and

those of bulbar section serve to establish the identity of the direct mechanism which presides over the manifestation of these effects. The pancreas plays the rôle of an inhibitor of the liver by means of its central nervous regulators."

This theory of Chauveau's, which I have not stated quite as fully as the author gives it, calls our attention to the unity of diabetes. It is complicated. It is based on analyses of the blood and experiments on the nervous system, both of which methods of experimentation give opportunity for error. Nevertheless, it furnishes a better explanation of all forms of diabetes than anything yet advanced and will be useful in suggesting further work.

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RELAXATION AS A CURATIVE AGENT.

BY ANNIE PAYSON CALL, BOSTON.

MANY diseases are either caused by or accompanied with unnecessary tension, and in addition it might be said that many diseases cause tension. This tension, which is involuntary but can be voluntarily dropped, disturbs the natural equilibrium of the forces of the body, and will not allow Nature to do her perfect work. The antidote is relaxation; and this being the case, certainly relaxation is not given the place that should be accorded to it among the natural curatives. Neither is it yet recognized to be as effectual an aid to the better working of medicine, as exercise, fresh air, nourishment, and so-called rest, which is often very far from relaxation. These four are accepted natural curatives; but their good effects may be greatly enhanced by systematic relaxation, which renders the body more susceptible to their influence.

Take the simple instance of severe pain, which of itself directly excites contraction. A very slight effort of the will to relax the suffering part often brings almost immediate relief. It is because of their relaxing power that warm applications are made. If these in return were assisted by the natural voluntary relaxing of the patient, each might help the other greatly and save much unnecessary suffering. With severe pain contraction is so abnormally instinctive that it seems at times to relieve it, but after such relief there is always a reaction which means increased suffering.

Many forms of indigestion result from contraction, and nothing else, and it is marvellous that medicine should have any effect in such cases, when it is steadily thwarted by an extreme tension on the part of the patient, a tension which might be dropped voluntarily.

Of course indigestion of this sort can become chronic, when the tension is continued long enough to get beyond medicine or natural cures.

The semi-invalids who come week after week for more medicine and expect it to do its work and cure while they are steadily resisting it, are familiar occupants of a physician's office. But it does not, apparently, occur either to the patient or the physician that the patient can be taught not to resist, by as normal a process as a child is taught the use of its fingers on the violin—or the voice is given its natural freedom, that it may express itself in song.

It is an almost equally familiar fact that there are invalids, so-called, in whom the original disease has entirely disappeared, but the brain impression is almost, if not quite as strong as during the disease, and the patient is ignorant of the fact that he has recovered. The disease habits here often take some form of tension, the dropping of which helps the patient to reach a normal state, although there must be at the same time some mental effort.

Nervous tension is often so immediately connected with some mental impression that in order to relieve it the greatest tact is required. For instance, you cannot say to a man, "My dear sir, you are quite well if you will only behave as if you were." That would throw him back more decidedly upon the sick-list; but you can lead him little by little until he sees the state of his own case, believing this to be entirely his own discovery, and so takes pleasure in removing all abnormal habits and curing himself.

So it is with many cases of nerve trouble which arise from an over-worked, over-excited, or over-anxious brain. One form after another of mental strain the patient *must remove himself* before he can really begin to get rid of the tension that is keeping him ill. The triviality of these nervous anxieties is most remarkable, but of course they should be looked upon as mere forms of tension and dropped, just as one might study a muscle that is unnecessarily contracted and train it to a natural freedom. On the other hand, their triviality can never be truly impressed upon the patient unless he is led to discover it himself. A blunt effort at persuasion merely increases the tension, and this same tension, of course, retards the recovery.

A nervous invalid of this sort should be trained always objectively, as far as possible. Without such training, a man, or more especially, a woman, may be kept ill unnecessarily long, through the action and reaction of an anxious mind and tired nerves. The anxiety seems real and so works upon the tired nerves. The tired nerves are a physical reality and not only increase the anxiety but, in nine cases out of ten, cause it. The tension is continued and the patient is kept ill, and neither fresh air, exercise, nourishment, sleep, nor medicine can help a man, to any extent, where his own will persists in permitting his abnormally anxious brain and tired nerves to play back and forth one upon the other. This condition is more common with women than with men. Some women seem to take pleasure in overloading and emphasizing their anxious brains, in lacerating their tired nerves and then taking a daily, almost hourly, unhealthy observation of both. This, of course, is due to the more sensitive nervous temperament of the woman. But it is like rubbing a wound and then expecting it to heal, or perhaps in this case there is even a grim enjoyment of the non-healing process. And all so unnecessary if one would learn to

look the other way, while nourishment, fresh air, exercise, sleep, and a normal relaxation are doing their own work with the assistance of whatever medicine may be needed.

Beside this nervous fatigue, there are many forms of nervous contraction from apparently no immediate organic cause, which might be greatly helped by gaining the power to relax normally. As an instance may be given a case of a woman who had suffered for years from an inability to articulate clearly and a want of power to direct her muscles. She could not make herself understood by any one, and at times would fall full length upon the floor, so uncertain was her balance. Physicians had told her that there was no cure, and after thirty years of this unfortunate state, she has now learned not only to balance herself on both feet, but to stand and rest easily upon one, and has gained the power of communicating with others with a perfect articulation.

The fact of the possibility of dropping unnecessary tension seems to be little recognized by many physicians. A short time since a very prominent doctor in one of our large cities, informed a man who applied to him for help in a spasmodic contraction of the throat, that he could not help him in any way: but added, "Nothing worse will happen than that you will faint away, and you will be all right then, for your throat will relax." It never occurred to him that the man, who had an excitable, nervous temperament, somewhat over-strained, might learn to relax his own throat, and save the inconvenient relief of fainting at times for the purpose of regaining his breath.

Unnecessary contraction, while more immediately recognized in such cases as the above, may be found, although by no means to so great an extent, in many diseases that have not a directly nervous cause. Various forms of congestion are accompanied with contraction. Fever may be increased by an excitement which causes contraction, and decreased by quietly giving up to it and letting it have its way. And so one form of disease after another could be named, which is increased by the accompanying contraction and would be correspondingly abated by its removal.

With unnecessary contraction, nourishment has not its full effect, the digestion is labored, so that nervous force is used in the process of digestion which would otherwise be kept for new life. Fresh air has not its full reviving effect, for the circulation is impeded, and the blood cannot carry the oxygen so freely through the body. Vigorous exercise is not taken as easily when the muscles are not normally directed, neither is it as beneficial in its results. First, because of the waste of force in motion; second, because as a result of this waste, there is often more or less tension when resting, which does not allow the quickened circulation all the freedom required for its best result. With unnecessary tension, sleep is not so restful as it should be, for when one does not give way to a perfectly natural sleep, the waste cannot be supplied so rapidly. Where it should be all a building up, there is at the same time a using up of force, all the more trying because it is abnormal.

Fresh air, exercise, nourishment and sleep are Nature's curatives. To lead the patient to a greater freedom is only to open the way that these may have a more immediate effect. The freer the body, the quicker Nature can bring it to a state of health, whatever may have been wrong in the beginning, and this, of course, applies equally to the action of medicine.

A man takes ether not only to get relief from pain, but to be kept in a passive state which will enable the surgeon to do his work, unhampered by the contractions that would inevitably come from fear or pain.

There is no ether that will keep a sick man in a state of freedom and allow the disease to run its course and be over with, but there is a natural freedom which might come without ether if the patient had a little knowledge of how to gain it.

A disease has a natural course, even though it is a disease, so truly does order reign in spite of man's disorder, and to give it its freedom with the guide of the curatives, would lessen the possibility of after effects which are often worse than the disease, or of death itself.

It is, of course, impossible to train a very sick man to keep quiet and free and let the disease be taken care of by Nature and medicine, but it is quite possible to train one who is not very ill, so that he may be saved much unnecessary suffering. Even a very sick man, if he is in his right mind, may be helped by gentle and constant suggestion.

Of course, as a preventive, a training to natural freedom could be used illimitably, but the object of this article is only to call attention to its curative power. A sense of weight may be given to the whole body, through getting the impression of weight from the slow lifting of an arm — either by another's moving it gently so that it must gradually be passive, or by the patient's being taught to lift it himself from the shoulder — even an inch from the bed, and then dropping it. As this is repeated over and over, the impression grows and a greater sense of weight is spread over the whole body, which relieves the tension and gives a certain degree of freedom. In addition to this, is the quiet effect upon the brain, which comes from fixing the mind upon something so simple. The result of the idea of weight tends to spread the freedom over the entire body, unconsciously to the patient.

Great care must be taken that the sense of weight is weight alone and not pressure.

This same result sometimes comes more quickly by a very slow lifting of the head by the two hands of another. The extremely slow motion of head, legs, or arms always has a directly quieting influence and so leads to greater freedom.

The immediate effect upon the brain of breathing is very well known, and various forms of quiet, long, and short breaths, can be made most useful, especially if the patient is well enough for the simple concentration of counting, — for instance, inhale counting seven, exhale counting seven — rest (breathing naturally) counting seven — and repeat this seven times keeping his own count. This may be increased to nine, twelve, fifteen, twenty-four, and the resting periods may be doubly as long as the breathing.

This simple concentration is often difficult even for those who call themselves well, and is most useful in focussing the mind with many who have, or have had, nervous prostration. A return, after a long nervous illness, to a natural use of the mind in talking, in reading, or in the various daily affairs of life, is often difficult, when otherwise one might be perfectly well, and is made easier by this simple form of concentration in breathing, because through it the brain gets a better balance. Added to these, are other exercises in concentration, by which, through keeping the mind steadily for a very short time on various forms and motions of

nature, a strong brain impression is made and a healthier state of nerve brought about. These must be chosen with care and with special reference to individual needs, and are meant, of course, for help in nervous cases. They are successful often where the interest needs to be roused, and help comes as much from the way the exercise is given as from the exercise itself.

Having given an idea of weight and the deep breathing exercise according to the state of the patient, more or less can always be done in helping the power of direction, so that only the muscles needed will be used, even in turning over in bed or moving an arm or leg. Very great help is given through conveying an idea of what it is to free one's self from unnecessary mental tension.

Take a case, for instance, in which the patient is resisting constantly in his mind the fact of being ill. This resistance produces a tension of the brain, the effect of which is felt upon the entire body. Now if he can be shown, quite simply, that he must be perfectly willing to be ill, for that *will help him most to get well*, there is a counteracting effect at once and Nature and the doctor are given a better chance.

To be sure there are often instances where the patient instead of resisting the illness gives up to it too willingly. In that case he is resisting recovery and must no more be permitted to do so than to resist the illness. *Relaxation is necessary only in so far as it trains the body to a normal freedom and so enables it to find and hold its own equilibrium.*

It may be thought to be impossible to change a man's mental state to such a degree, but that depends upon how it is approached. As has been said before, all the tact of a diplomatist must be used in such training, as indeed in all training for a natural freedom.

The same is true of the resistance to various annoyances, great and small. Indeed irritability is one of the most fruitful causes of prolonging disease. The unwillingness in each case has the same effect upon the brain, and its counteraction brings immediate relief and so opens the way for a more rapid cure.

The process of relaxation as a curative may be briefly summed up thus: a greater freedom of the body to be gained through obtaining a sense of weight, quiet and deep breathing, and a power of natural direction and simple concentration.

It results in a freeing of the body, which will more certainly and rapidly permit a wholesome effect from fresh air, exercise, nourishment, sleep, medicine, and other curative processes.

Clinical Department.

TWO CASES OF PULMONARY CONGESTION AND OEDEMA OCCURRING DURING PREGNANCY.¹

BY FRANCIS W. GOSS, M.D., ROXBURY, MASS.

CASE I. Acute pulmonary congestion and oedema in patient six and one-half months pregnant. Death.

At 2 A. M., March 27, 1889, I was called to see Mrs. D., six and one-half months advanced in her first pregnancy. She had recently moved to Roxbury from a distant part of the city. Her pregnancy had been uneventful till the present illness.

¹ Read before the Boston Society for Medical Improvement, January 22, 1894.

During the afternoon preceding my summons she had been to see her physician, three or four miles away, because of a slight cough, and some difficulty of breathing, which had troubled her for a day or two. She retired as usual, slept for several hours, and then woke suffering from great dyspnoea and distressing cough. When I reached her she was sitting in a chair, in extreme distress, with alarming dyspnoea, rapid breathing, coughing and expectorating quantities of bloody serum. Her face was dusky, skin cold, and bathed with clammy perspiration. Her pulse was very rapid and feeble; the lungs filled with moist râles, and her condition betokened impending death. She lived but a short time, — not more than half an hour after my arrival.

Her physician informed me that there was nothing apparently serious in her condition when she called upon him the previous afternoon, and he was much surprised at her sudden decease.

CASE II. Sudden pulmonary congestion and oedema in patient six and one-half months pregnant. Induced labor. Recovery.

Mrs. M., six and one-half months advanced in her seventh pregnancy summoned me at 11 P. M., October 26, 1893, on account of severe dyspnoea.

She had been seen nine days before by Dr. G. W. Clement in a similar attack, when her husband came for him saying that he believed his wife was "choking to death." Dr. Clement informs me that he found her sitting in a chair, bent forward, coughing hard and raising bloody, frothy sputa. The chest was filled with moist râles, the pulse was quick and feeble, and her condition critical. He was with her some three hours before she was sufficiently relieved for him to feel that it was safe to leave her. She rallied under the use of stimulants and of pilocarpin *sub cut.* On subsequent examination he found a mitral systolic murmur of the heart, and albuminuria.

Being obliged to leave the city for several days Dr. Clement directed that I should be sent for during his absence, if there was need.

When first seen by me the patient was suffering from alarming dyspnoea and orthopnoea, frequent cough and expectoration of bloody sputa. Pulse 120, respiration 48. In about two hours, under the use of aromatic spirits of ammonia, nitro-glycerine, etc., she became easier, and I left her for the night.

October 27th. She was much more comfortable, and had slept somewhat. She reported an attack of acute rheumatism several years ago, and another last winter.

Examination of the heart showed marked mitral systolic souffle; not much enlargement of the organ. Some oedema of extremities. Urine abundant under the use of diuretics prescribed by Dr. Clement. Albumen, one-third bulk. Epithelial and granular casts.

The patient said that she had not felt any foetal movements since the attack of dyspnoea ten days ago. No foetal heart heard on auscultation. She has had two premature births of dead children at about seven months, since birth of last living child four and one-half years ago.

October 29th. Has had some return of the paroxysms of dyspnoea. In view of the recurrence of the attacks and the continued tendency thereto, and the cardiac and renal disease, it seemed to me that the patient's condition was critical so long as the foetus remained in utero. Accordingly, under antiseptic precautions, I introduced a catheter through the cervix

uteri, with the view of bringing on premature labor. Pains came on during the evening and at 12.20 A. M. October 30th she was delivered of a fœtus apparently of about six and one-half months' development which had evidently been dead for several days.

With the exception of some rise of temperature on the second day, for which an antiseptic intra-uterine douche was given with immediate improvement, the patient made a satisfactory recovery.

November 30th. The patient is about and doing house-work. Feels fairly strong; no return of dyspnoea since labor. Urine abundant; specific gravity 1.025; albumen small in amount; and but one granular cast found in examination of two slides.

Judging by what I can learn from the text-books, and from conversations with physicians, such cases as those here reported are fortunately rare. When they occur, and medicinal treatment does not relieve, it seems to me the only hope for the patient may be speedy delivery, if it can be effected. In the first case there was no opportunity for the procedure. In the second, the patient's life was in jeopardy as shown by the recurrence of the alarming attack, notwithstanding she was under the influence of digitalis, diuretics, cathartics, etc., prescribed by Dr. Clement.

Whether such conditions appearing in pregnant women are always accompanied by cardiac or renal disease, or by both, I do not know. These troubles were present in the second case. In the first the point was not determined.

TOXIC EFFECTS AFTER USE OF OIL MALE FERN (ETHEREAL) FOR TAPEWORM.

BY JOHN H. GRANT, M.D., FORT PORTER, BUFFALO, N. Y.,
Hospital Steward, U. S. Army.

C. H., aged thirty-five, was a soldier in the Garza campaign on the lower Rio Grande in Texas during the winter of 1890-91, at which time he was often obliged to subsist in part on insufficiently cooked goat meat. As a result, he became the possessor of a *tænia saginata*. Outside of the few large towns in this part of Texas, defecation by the inhabitants (principally so-called *greasers*) is universally carried on in the open-air and readily accounts for the manner in which our patient became infected.

In 1892, an army surgeon treated him by the administration of oil of turpentine, which produced violent strangury and the passage of about sixteen feet of the worm.

In November last he was again treated with drachm doses of oil male fern (ethereal) (of an old stock some time on hand); but two doses were retained, aborting about eighteen feet of the entosoa.

March 1st the man requested further treatment; and a fresh supply of the male fern having been received (W. H. Schiefflin & Co., New York), an emulsion with acacia was prepared, each fluid ounce containing one and one-third drachms of the oil. The day previous the patient abstained from solid food, a saline cathartic being administered at sunset. The morning following, at 6.30 one ounce of the mixture was given, and at 8.30 a like quantity; at noon a dose of sal rochelle was taken, resulting in the expulsion of about eighteen feet of the parasite. About 4 o'clock the patient, on leaving the water-closet, fell to the floor and had to be carried to his bed. The writer being

then called, found the patient in a most pitiable condition — almost pulseless, skin cold, eyeballs protruding and staring, suffused with tears, the lids puffed and of a dark-brown color. Deafness was nearly complete in both ears, but the sight was not at this time affected. Patient was husky, suffered from a vise-like constriction of the chest, gasping for breath, and with a ghastly expression of despair. He appeared to be *in extremis*. As soon as possible whiskey (one ounce) was administered, and a sinapism applied over the sternum. In about five minutes the pulse could be felt. The other symptoms gradually disappeared, so much so, that in a half hour the case was considered safe. The feeling of chest constriction and of burning within the stomach lasted for a few hours; but a few ounces of milk and whiskey and particles of ice freely dissolved in the mouth, soon gave relief. The patient had dimness of vision and was very weak and nervous the day following, keeping his bed for two days.

There were two interesting points about this case. The first was the extreme depressant action of the male fern in what might be considered not a large dose.¹ It will be noticed that it was nearly eight hours after the second and last dose in this case before any alarming symptoms presented, and not until after the bowels had been moved several times. The second point was the thrice-repeated failure to bring away the head. Diligent search in the present instance failed to discover any traces, although a portion of the voided parasite was very narrow. Possibly the head is very securely imbedded beneath a fold of the *valvula conniventes* and protected from the direct action of the drug. The peristaltic action of castor oil might have secured the head, but owing to the disgust excited by it in the patient on previous attempts, an alkaline cathartic was prescribed instead.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE AND PREVENTIVE MEDICINE.

BY SAMUEL W. ABBOTT, M.D.

INFECTIOUS DISEASES, AND THEIR PREVENTION.

Diphtheria. — Dr. Thorne Thorne, chief medical officer of the Local Government Board of England, in a recent lecture upon Diphtheria, said:

"Bad sanitary conditions might have an influence, but they are overwhelmed by other conditions which cause the disease. . . . Diphtheria chiefly attacks children of school age, from five to fifteen and it is clearly proved that the disease is influenced by school attendance. Dr. Power has shown conclusively that, by an aggregation of children at school, you can deliberately manufacture a potency of diphtheria. The reasons for this are chiefly the special infection from the breath of those who are congregated together for any length of time, and the limited space set apart for the scholars. There is also the danger, at young ages, of children passing confectionery from mouth to mouth, of drinking from the same unwashed cups, the absence of ventilation, and other conditions."

He laid special stress upon infection through the medium of milk, and advised every one to leave off drinking raw milk. He also named the lower ani-

¹ Pepper, vol. II, p. 941; Hand-book of Medical Sciences, vol. III, p. 65, and vol. VII, p. 790.

mals and especially the domestic cat, as carriers of infection.

Isolation was recommended as absolutely essential. In hospitals there should be much more attention to the amount of *lineal* space per bed, which he deemed of more importance than cubic air-space or high rooms. No child should go to school from a house where there is a sore-throat. The system of keeping up "average attendance" by insisting that all scholars should go to school had done much harm. Everything that touched the mouth or lips of a patient should be burned. Houses should be selected which are not damp, and dense foliage should not grow near them.

THE DISSEMINATION OF SMALL-POX BY TRAMPS.

Special prominence has been given to this subject by the medical officers of health of England, during the past year; and valuable papers have been published by Dr. Armstrong, of Newcastle-on-Tyne, and others. Dr. Armstrong says: "Of 63 towns invaded in 1892-93, the medical officers of health of which have given me the particulars, 37 or 59 per cent., had the infection primarily from vagrants. The disease was brought secondarily by vagrants into 36 towns, including some into which first cases had also been brought by the same class of persons. Such secondary infections occurred as often as nine times in Carlisle, Southampton and Sunderland, twelve times in Warrington, fifteen times in Keighley, eighteen times in Blackburn, and no less than twenty-five times in Nottingham. In nineteen times only out of the 63 towns reporting, was small-pox infection stated to have been brought otherwise than by vagrants; and in seven of these it was subsequently reintroduced by vagrants no less than twenty-five times. As a result of his inquiries Dr. Armstrong presented the following resolutions:

That the Incorporated Society of Medical Officers of Health consider it desirable:

- (1) That vagrants should be restrained in their powers of carrying infection about the country, especially in epidemic times.
- (2) That they should be made to report their movements.
- (3) That they should, when considered requisite, be subject to disinfection and detention for such time as the sanitary authority of the district in which they are may think necessary for the protection of the public health.
- (4) That in epidemic times all persons frequenting casual wards or common lodging-houses should be medically examined on admission.
- (5) That sanitary authorities and the police should have power to detain for medical examination any vagrant found in any public place.

MILK-INFECTION.

Prof. W. T. Sedgwick has contributed valuable papers upon different phases of this subject to the *Boston Medical and Surgical Journal* and to the Twenty-fourth Report of the State Board of Health of Massachusetts. Other investigations confirm the conclusions presented in these papers, first, as to the presence of bacteria in large numbers in milk as drawn from the cow, and, second, as to the question of milk as a medium for the transmission of the infection of typhoid fever.

König,¹ in his recent volume, says: "Cow's milk, although it may leave the udder free from bacteria, will be found to contain them immediately after milking. These bacteria enter the milk by means of hair,

and particles of dirt floating in the air of the stable, and increase with extraordinary rapidity.

Cropf and Escherich² found in milk, two or three hours after milking, by means of Koch's method of cultivation, from 60 to 10,000 colonies, and in five to six hours after milking 200,000 to 6,000,000 colonies per cubic centimetre.

E. von Freudenreich³ demonstrated the rapid development of bacteria in milk as follows; at different temperatures:

	NUMBER OF COLONIES OF BACTERIA PER CUBIC CENTIMETRE.		
	15° C. (60° F.)	25° C. (77° F.)	35° C. (85° F.)
3 hours after milking . . .	10,000	18,000	39,000
6 hours after milking . . .	23,000	172,000	12,000,000
9 hours after milking . . .	46,500	1,000,000	35,280,000
24 hours after milking . . .	5,700,000	577,000,000	56,000,000

Miquel⁴ also testifies to the rapid development of bacteria in milk, and to the fact that the rapidity of development depends upon the temperature of the milk. Although the bacteria may be harmless, their presence must be borne in mind, especially in the use of cows' milk as food for infants. In addition to the harmless bacteria, those which are pathogenic may also gain access to the milk, and thus cause disease.

In Luzerne, Switzerland,⁵ several epidemics of typhoid fever have been traced to buttermilk, which was returned from the creameries to milk-dealers after the cream had been removed for making butter.

A similar typhoid epidemic⁶ is detailed in the Danish "Wochenschrift für Aerzte," which occurred in the fall of 1886 in the three districts of Ore, Haarsley and Skowby, in the island of Fünen. The cause was traced to a common establishment belonging to these three parishes, from which buttermilk was re-sold to customers. Typhoid fever was found to exist at this establishment, and the sick patients had partaken of the returned buttermilk.

Another epidemic traced to buttermilk is reported from two districts in Hanover.⁷

In Groningen, Holland,⁸ another typhoid epidemic was reported in 1886, the cause of which happened to be the infection, in the dairies, of vessels washed with water which had been polluted by the excreta of typhoid fever patients.

Almqvist⁹ reports an epidemic of the same disease which occurred near Göteborg, Sweden, in 1889, in which the cause was determined to be the infection of skim-milk which had been returned from a dairy to the consumers.

Kitasato¹⁰ reports cases of cholera which were caused by the use of infected milk in Calcutta. The investigations of Koch and Kitasato show that cholera bacteria will multiply in milk. Their length of life depends on the reaction of the milk. The sooner it sours the sooner they die.

THE HYGIENE OF OCCUPATIONS.

The well-known observations of Dr. Farr upon the mortality of persons engaged in certain occupations, as deduced from the Registration Reports of England, have been supplemented by valuable papers on the same subject by his successor, Dr. Ogle.

¹ Chem. Centralblatt, Bd. II, pp. 583, 584.

² Kleine Milchzeitung, 1890, No. 2.

³ Chem. Centralblatt, 1890, I, p. 1064.

⁴ Milchzeitung, 1890, p. 296.

⁵ Ibid., 1886, p. 634.

⁶ Ibid., 1890, p. 245.

⁷ Ibid., 1886, p. 875.

⁸ Zeitschrift für Hygiene, 1890, 8, 137.

⁹ Ibid., 1889, 8, 491.

¹ Chemie der Menschlichen Nahrungs und Genussmittel, Third Edition, 1893.

The following is selected from several tables presented by Dr. Ogle at the last session of the International Congress of Hygiene at London.

COMPARATIVE MORTALITY FROM PHTHISIS AND RESPIRATORY DISEASES, OF MEN FROM TWENTY-FIVE TO SIXTY-FIVE YEARS OF AGE, ENGAGED IN VARIOUS DUST-INHALING OCCUPATIONS.

	Phthisis.	Lung Diseases.	Total.
Fishermen (as standard)	55	45	100
Carpenters, joiners	103	85	170
Bakers	107	94	201
Wool-workers	130	104	234
Cotton-workers	137	137	274
Cutlers, scissor-makers	187	196	383
File-makers	219	177	396
Masons, brick-layers	127	102	229
Stone- and slate-quarry men	156	138	294
Pottery-makers	239	336	565
Cornish miners	348	281	579
Coal miners	64	102	166

The point most worthy of note in the foregoing table is the remarkable immunity of coal-miners from phthisis, as compared with the high mortality of the metal miners of Cornwall.

ON THE QUALITY OF THE BERLIN SERVICE-WATER.¹¹

Dr. Proskauer furnishes additional facts upon the effect of filtration of water through sand, as investigated by Piefke and Fränkel.

The volume of water furnished to Berlin is daily on the increase, and this increase is not due alone to the growth of population, but also to a larger consumption per head. Respecting the composition of the unfiltered water of the Spree, and of Lake Tegel, which furnish the city water-supply, the author points out that the experiments carried out during the last few years, with reference to the power of the sand-filters to arrest micro-organisms, have shown that it is imperative that the source of water should be, as far as possible, protected from pollution by human excreta, so as to furnish a raw material of the utmost degree of purity.

In this respect, the water of Lake Tegel is greatly preferable to that of the river as drawn at the Stralau works. The river water is, as a rule, strongly yellow in color, almost always turbid, and has a muddy taste and smell. When allowed to stand, it has at times a considerable deposit, consisting mainly of organic detritus and bacteria. The water of the lake is, as a rule, clear, but occasionally slightly turbid; in color it is pale yellow, and the taste and smell rarely dead and earthy. This, in fact, occurs only when the snow melts in the spring, and there is at certain periods a slight deposit. The bacteriological examinations showed that the river water was usually very rich in germs, and that the number is on the increase. Out of sixty analyses in the period of two-and-a-half years, the number of colonies of bacteria in one cubic centimetre of water was,

In 16 cases or 26.6% of the tests over	100,000
In 23 cases or 38.3% of the tests between 10,000 and 100,000	
In 20 cases or 33.3% of the tests between 1,000 and 10,000	
Only one sample contained less than 1,000 germs.	

Contrasting the totals per cubic centimetre in the present period with those in former years, it appears that in

1884-85 there were from	59 to 8,316 germs
1885-86 there were from	191 to 110,740 germs
1886-87 there were from	750 to 17,000 germs
1887-88 there were from	1,400 to 186,000 germs
1888-89 there were from	230 to 190,000 germs
1889-91 there were from	940 to 360,000 germs

The author believes that the water of the Spree is becoming so polluted that its use must either be shortly discontinued on sanitary grounds, or the filtration must only be permitted to be carried out under the most stringent precautions.

There were only three occasions, however, when the number of germs per cubic centimetre in the water of the Tegel exceeded one thousand.

With reference to the filtered water, the author says the number of bacteria capable of development after filtration were as follows:

During 1889-90 from	12 to 110 per cubic centimetre
During 1890-91 from	9 to 310 per cubic centimetre
During 1891 (last half)	3 to 60 per cubic centimetre

Only three times during the whole period did the number of germs in the filtered Tegel water rise above one hundred per cubic centimetre.

On twenty-three occasions the filtered water of the Spree contained more than 150 germs, the numbers ranging from 310 to 13,000 per cubic centimetre. In certain cases these high ratios of germs were attributed to the freezing over of the filter-beds. The beds at the Tegel works are covered in and cannot become frozen in winter.

After reviewing the chemical and bacteriological analyses of the water, the author points out that only the latter tests furnish an accurate and liable indication of the working of the filter-beds. The quality of the service-water was tested in the mains at various parts of Berlin, and copious tables are given of the analyses of the water, made at stated intervals during the whole period.

LEAD-POISONING FROM A PUBLIC WATER-SUPPLY.

Several cases of poisoning in the town of Calau¹² induced the government to make an inquiry as to the cause. The water was of extreme purity, as indicated by chemical analysis, and contained only five germs per cubic centimetre. It was brought to the town in cast-iron pipes coated with asphalt composition, but the houses were supplied by means of lead-pipes of considerable length. Two months after the water was introduced there, some cases of lead-poisoning were reported among inhabitants where the water remained undisturbed in the pipes during the night. An inquiry conducted under the direction of Dr. Koch revealed the presence of lead, varying in amount from a mere trace to thirteen milligrammes per litre.

The reason for this rapid absorption of the lead was shown to be the richness of the water in free and partially combined carbonic acid, the low percentage of carbonates, and its extreme softness. The tendency to dissolve lead was further increased by the large volume of air contained in the water, which was taken up during its flow through the mains, for at the source it contained no air whatever.

THE WATER-SUPPLY OF PARIS.

The new water-supply of Paris,¹³ now being introduced, will yield a supplementary supply of 25,000,000 gallons per day, at a cost of about \$7,000,000. The sources are two streams, the Breuil and the Vigne, whence it is to be brought to the reservoirs at Montrebon, a distance of about 68 miles, of which 38½ miles are open cutting, 18½ miles are underground conduits,

¹¹ Zeitschrift für Hygiene, vol. xiv, 1893, p. 260.

¹² Ibid., vol. xiv, 1893, p. 296.

¹³ Le Gentle Civil, vol. xxii, 1891, p. 181.

3 miles elevated conduit, and $4\frac{1}{2}$ miles are siphons. The diameter of the open cutting varies from 5 feet 10 inches to 6 feet 2 inches. The reservoirs are designed for a capacity of 10,600,000 cubic feet, and are divided into three compartments.

A NEW DISINFECTING APPARATUS.

This apparatus was designed by Mr. O. Krell and Dr. Rapschefsky, at the direction of the inspector of the medical department of the Russian army. In the first instance all existing forms of apparatus were procured, and were submitted to a searching trial. The conditions laid down for the new apparatus were:

(1) That it should destroy entirely, not only the germs of all known pathogenic organisms, but even those bacilli found to be the most difficult of extermination (the garden-mould bacillus).

(2) That the disinfection should be accomplished in the shortest space of time.

(3) That the apparatus should be as simple as possible, both in construction and in manipulation.

The various systems tested were: (1) hot air; (2) superheated steam; (3) saturated-steam jets; (4) saturated steam at rest, with means for creating high pressure during disinfection; (5) saturated steam at rest at about atmospheric pressure, with means for producing a vacuum by condensation; (6) saturated-steam jets at high pressure, with superheating.

The operations of these various classes of disinfecting apparatus were discussed in detail; and the experiments led to the conclusion that the new apparatus must work by means of saturated steam at a high pressure, with provision for the ventilation of the disinfecting chamber, and with special air-inlets also at the floor level, without special heating apparatus within the chamber, but furnished with heat-accumulators. The apparatus is made of steel, is cylindrical in form (8 feet in diameter and 5 feet long). The cylinder is placed horizontally, and has doors at each end, fastened to bronze rings with six screw-bolts to each. The chamber is tested to a pressure of ten atmospheres at the works, but the safety-valve is weighted to lift at three-quarters atmosphere above normal.

The total weight of the apparatus is about one ton. It is distinguished from all others by its rapidity of working. The previous heating up of the chamber from the cold state takes two minutes; and in fifteen minutes more a temperature of 100°C . (212°F .) is reached, even through a thickness of thirty-two blankets, while, in five minutes more, the temperature rises to 112°C . (234°F .). The disinfection, therefore, even of the most difficult objects, can be completed in twenty-two minutes. The working speed is contrasted by the author with that of other forms of apparatus now in use, and the advantage of saturated steam at 100°C . over heated air, even at 150°C ., as determined by Koch,¹⁴ is insisted upon.

RECENT APPARATUS FOR CREMATION.

Dr. T. Weyl,¹⁵ of Berlin, gives a brief historical account of the practice in all past ages (introduced by the Aryan race), and traces the revival of the practice to the close of the eighteenth century, although from that time till the first cremation in Europe at Milan, January 27, 1876, a period of nearly eighty years

elapsed. Since that date the practice has extended in Italy, till there are now 27 crematories in operation in that country alone.

In Germany, the first crematory was built at Gotha in 1878. No others were introduced till that at Hamburg in 1891, but very soon after others were erected in Heidelberg, Berlin and Offenbach. The number of cremations at Paris reaches a total of 400 annually, and the system is in use to some extent in Switzerland, Denmark, Sweden and the United States. The author classifies the existing establishments under two heads, those without regenerative furnaces and those which adopt this plan. To the former class belong the crematories of Milan, on the system of Gorini, and that of Venini, which is a modification of the former. In the latter class are included the crematory at Gotha, in which, during the period ending November, 1891, no less than 976 bodies had been disposed of. The process here lasts two hours-and-a-half, and the cost is about eighty marks (\$18.50). The system of Bourry at Zurich, the furnace of Toiseul and Fradet at Père-la-Chaise, in Paris, and others at Stockholm and Gothenburg are founded on the regenerative furnace of Siemens. The furnace of Guichard differs from those mentioned by the use of coal-gas and compressed air; it has, therefore, no gas-producer furnace. In an experimental trial of this furnace at Paris, the process lasted forty-six minutes, and involved the use of 190 cubic metres (about 6,700 cubic feet) of gas and 500 cubic metres of compressed air. A table is appended, giving the cost of cremation with each system, together with the time employed in the antecedent heating, and also in the cremation itself.

INFECTIOUS DISEASES.—PERIODS OF INCUBATION, QUARANTINE AND INFECTION, AND SOURCES OF INFECTION.

The following summary is condensed from Dr. L. F. Parkes's recent "Handbook of Infectious Diseases," and will be found very useful to boards of health and sanitary officials for reference, as well as to general practitioners of medicine.

DIPHTHERIA.

Incubation Period: least, unknown; average, 2 days; greatest, 7 days.

Quarantine Period: 7 days from last exposure to infection.

Infective Period: from the beginning of symptoms, for the whole period of illness.

Sources of Infection: 1. From a previous case, acute or convalescent. 2. From a case of apparently simple tonsillitis. 3. From a case of apparently simple nasal ulceration or osena. 4. From domestic animals (cats, pigeons or fowls) suffering from a throat affection of a diphtherial nature. 5. From cows' milk, by human infection of the milk in the cow-sheds and dairies, etc. 6. From fomites, that is, infected bedding, clothes, carpets, curtains, books, toys, cups, spoons, forks, etc. 7. From a person who has been in contact with a diphtheria patient, but who has not himself contracted the disease. 8. From defective sanitary conditions; these are probably merely predisposing causes engendering morbid conditions of the tonsils favorable to the growth of diphtheria contagion when implanted thereon.

SCARLET FEVER.

Incubation Period: less than 24 hours; average, 1 to 3 days; greatest, 7 days.

Quarantine Period: 7 days from last exposure.

Infective Period: from earliest appearance of symptoms, till all desquamation has ceased.

Sources of Infection: 1. From a previous case of scarlet fever, acute or convalescent. 2. From a case of sore throat without discernable rash, but merely a mild form of the disease. 3. From cows' milk, either by human infection of the milk in cow-sheds and dairies, or during the milking, or from a diseased condition of the cows. 4. From fomites. Infection may be carried by persons who are not themselves sufferers, if they have been in contact with patients.

¹⁴ Gesundheits Ingenieur, August 31, 1892, p. 521.

¹⁵ Ibid., 1892, p. 377.

MEASLES.

Incubation period: from exposure to infection to onset of illness: least, 4 days; average, 9 to 10 days; greatest, 14 days.
From exposure to infection to appearance of rash: least, 7 days; average, 14 days; greatest, 18 days.

Quarantine Period: 15 days from last exposure to infection.

Infective Period: from earliest appearance of symptoms till convalescence is well established. The catarrhal stage preceding the eruption is very infectious.

Sources of Infection: 1. From a previous case of measles. 2. From fomites.

MUMPS.

Incubation Period: least, 14 days; average, 21 days; greatest, 25 days.

Quarantine Period: 25 days from last exposure to infection.

Infective Period: from onset of prodromal stage for 2 or 3 weeks subsequent to appearance of parotitis. The chance of infection diminishes progressively from the onset of the disease.

Sources of Infection: 1. From a previous case. 2. From fomites.

GERMAN MEASLES.

Incubation Period: least, 5 days; average, 18 days; greatest, 21 days.

Quarantine Period: 21 days from last exposure to infection.

Infective Period: from onset of prodromal stage to cessation of desquamation.

Sources of Infection: 1. From a previous case. 2. From fomites.

INFLUENZA.

Incubation Period: less than 24 hours; average, 3 to 4 days; greatest, 5 days.

Quarantine Period: 5 days from last exposure to infection.

Infective Period: from earliest onset of symptoms till convalescence is well established.

Sources of Infection: 1. From a previous case of influenza. 2. From fomites.

WHOPING-COUGH.

Incubation Period: least, 7 days; average, not determined; greatest, 21 days.

Quarantine Period: 21 days from last exposure to infection.

Infective Period: the whole period of illness from onset of earliest catarrhal symptoms.

Sources of Infection: 1. From a previous case of whooping-cough. 2. From fomites.

SMALL-POX.

Incubation Period: least, 9 days; average, 12 days; greatest, 15 days.

Quarantine Period: 15 days from last exposure to infection.

Infective Period: from the onset of initial symptoms till all scabs have been removed. The period of greatest infectivity is during the acute stage (vesicular and pustular). During the initial illness and until the appearance of the rash the liability to impart infection is not great.

Sources of Infection: 1. From a previous case of small-pox. 2. From fomites. Infection can be carried by a person who has been in contact with a small-pox patient, but who is not himself a sufferer from the disease. 3. Proximity to a small-pox hospital containing numerous cases in the acute stage.

CHICKEN-POX.

Incubation Period: least, 13 days; average, 14 days; greatest, 19 days.

Quarantine Period: 19 days from last exposure to infection.

Infective Period: from appearance of eruption till this has completely disappeared.

Sources of Infection: 1. From a previous case. 2. Fomites. The infection may be carried by those who have been in contact with the disease.

TYPHOID FEVER.

Incubation Period: least, 8 days; average, 12 to 14 days; greatest, 23 days.

Quarantine Period: 23 days from last exposure to infection.

Infective Period: the excreta are infectious through the whole course of the disease and until convalescence has been established at least a fortnight.

Sources of Infection: 1. Water, food or air contaminated by the specific virus contained in the excretions of a typhoid-fever patient. 2. Fomites. Infection may persist for several weeks in infected clothing and bedding shielded from exposure to light and air.

TYPHUS FEVER.

Incubation Period: average, 7 days.

Quarantine Period: 14 days from last exposure to infection.

Infective Period: from beginning of illness till convalescence.

Source of Infection: From a previous case of the disease.

Fresh air and free ventilation rapidly destroy the virulence of

the contagion. Fomites probably do not propagate the contagion.

ASIATIC CHOLERA.

Incubation Period: least, a few hours; average, 1 to 2 days; greatest, 10 days.

Quarantine Period: 10 days from date of last exposure to infection.

Infective Period: from earliest onset of symptoms till complete recovery.

Sources of Infection: 1. From water, food and air contaminated with the discharge of a person suffering from cholera. 2. From fomites. 3. There is reason to believe that the virus contained in the excreta at the time of leaving the body of a patient and for a short period afterward, is in a less active condition and more easily destroyed by chemical agents than after such excreta have been exposed for a short time to contact with the air.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, January 22, 1894, the President, DR. C. F. FOLSBOM, in the chair.

DR. F. W. GOSS reported

TWO CASES OF PULMONARY CONGESTION AND OEDEMA OCCURRING DURING PREGNANCY.¹

DR. E. REYNOLDS: This subject seems to me one which rests upon a basis of clinical medicine and physiology more than obstetrics. I came to-night prepared to learn rather than to contribute anything valuable to the discussion, and my impression that that would be the case is strengthened by the paper. All that I can say on the question is derived from a theoretical standpoint. We know that in normal pregnancy the systemic circulation labors under an increased obstacle, that that obstacle is thrown back through the left heart on to the pulmonary circulation and the right heart; there is normally then an increase of tension throughout the whole circulatory system. We know that as pregnancy advances the heart normally enlarges. Authorities are divided as to whether it is by dilatation or hypertrophy; the fact, however, being probably, that it is usually a mixed process, though either factor may predominate. Under these conditions it is easy to see that any slight addition to the obstacle may induce an oedema, especially in the pulmonary circulation to which the whole obstacle is thrown back.

Such a complication occurring, the question of treatment, it seems to me, should be primarily solved by a resort to medical measures, everything to strengthen the heart, everything which can relieve the system of its added load; depletion of the circulatory system so far as that is consistent with the patient's general strength. But the question of the induction of labor seems to me a very difficult one. We know that in normal cases cardiac symptoms develop during labor in a large proportion of all instances, from the fact that during the contractions of the uterus, and during the increased tonic pressure upon the uterine vessels in labor, the extra load which the heart is already carrying is actually increased again, and that many hearts fail to compensate this extreme load even under normal circumstances.

Where the heart has already given out during pregnancy, I should question much the wisdom of adding to it the extra load of labor. I should feel I should

¹ See page 336 of the Journal.

not be willing to recommend the induction of labor until all medical means had been exhausted, and should personally feel that I should be unwilling to do it until after consultation with the best authority in clinical medicine whom I could obtain. If, as in Dr. Goss's second case, the woman recovered sufficiently to be in fair condition, and yet not so thoroughly but that there was a strong prospect of a recurrence of this very dangerous complication, I should be inclined to induce labor, but I should feel that in that case everything was in favor of the most rapid methods, of those which would least prolong the added strain upon the heart, due to the pressure of the contracting uterus. Such cases are, of course, unfit for anæsthesia. In some cases rapid delivery without anæsthesia is impossible because the muscular fibres of the cervix resist dilatation too firmly. In other cases, and especially in those in which the patient is already in a state of exhaustion, a moderately rapid dilatation of the os by the hand can be carried on without anæsthesia, to a degree which at least will permit the introduction of one finger. When one finger can be introduced into the uterus it is usually possible to hook down the foot of the fœtus at six or six and a half months; and by traction on the foot, any os can be gradually dilated, the fœtus acting as a wedge, and exerting pressure from above. I should be inclined to believe that such a method as that would be much preferable to any gradual induction of labor, but as I said, I can speak of this question only upon theoretical grounds and not from experience. My own experience with pulmonary œdema as a complication of pregnancy has been wholly limited to cases of renal origin with which, as I understand it, this discussion is not concerned.

DR. C. M. GREEN: I can add very little to the subject; I came to learn. It has always been taught that in such cases induction of labor should be the last resort; that medical measures should be the first recourse; and only on their failure and in critical condition of things, as a last hope, labor should be induced. I am reminded of a case which I saw in consultation, where the cause of death was uncertain; but the clinical history of the case was very similar to that of Dr. Goss's cases. The patient was taken with serious dyspnoea. There was œdema of the lungs and some lesion of the heart, I believe. She was, however, more nearly advanced to term, and I am not sure she was not very near to term. It was thought best to deliver her, and it was done; but the patient died after a few days of the combined difficulty, which, I believe, was somewhat of the kidney and somewhat of the heart. I should, I think, in such cases place my chief reliance on medical measures, should relieve the lungs by action upon the kidneys and bowels. The literature of the subject is very scanty.

DR. A. L. MASON: I should like to ask, whether in cases of extensive œdema of the lungs from pregnancy, Bright's disease or other causes, there is any objection to the use of pilocarpine subcutaneously.

DR. GOSS: In the first attack of the second case Dr. Clement used pilocarpine subcutaneously, hoping to relieve the condition of the lung, and the patient was relieved by its use. There was a profuse increase of saliva, the woman bending forward and the secretion running from her mouth. I suppose there is always the risk of the patient being drowned, so to speak, by the profuse secretion in the use of pilocarpine under such circumstances. Regarding the induction of pre-

mature labor in the second case, as far as the child was concerned it seemed to me there was not much hesitancy because there was every evidence that the child was dead. I sought counsel before proceeding to induce labor; and in this case, at any rate, relief was obtained, and there has not been recurrence of the serious attacks. Medical treatment had been thoroughly tried, and the patient still remained in a precarious condition, and it seemed to me that the induction of labor was the only thing remaining to be tried. I think the method pursued was safer than rapid dilatation and forced delivery would have been.

DR. GREEN: I have used pilocarpine in pulmonary œdema of renal origin especially, and very rarely has it seemed to do harm. I recall one case of extensive œdema of the lung, in which I thought the patient would drown, so extensive was the salivary secretion. She, however, recovered. It seems to me that with careful watching, to guard against the depressing effects of pilocarpine, and by keeping the heart well supported, it is a safe drug and acts very successfully.

DR. REYNOLDS: I should like to add the same experience with a single exception of one distressing case that I saw in consultation, that did die; but I think the drug relieved the condition in a number of other cases.

DR. MASON: Recently a case of a different nature came under my observation, a man with Bright's disease and very extensive œdema of the lungs. The question of pilocarpine came up. It seemed to me there was so much œdema that it was not a good drug to use, and it was not used. I am glad to know that it is generally safe.

A CASE OF APPENDICITIS.

DR. C. F. FOLSOM: Last night (Sunday) I went to my office at 9.30, and found a lady waiting to see me in reference to a member of her family who had slight pain in the lower part of the abdomen, thought to be due to having eaten a raw apple the previous evening. She had vomited slightly Saturday evening, and had had two loose discharges. She had been moderately comfortable during the day. I said I should rather see her before suggesting anything, but the lady said it was quite superfluous, as there was nothing serious the matter. I called and found a slight localized tenderness inside the crest of the ileum on the right side. The patient looked perfectly well, pulse below 100, had had a slight chill. I said I would see her again in the morning. I found she had had a rather uncomfortable night, and the tenderness had become a little more diffused, extended nearly to the umbilicus, but also in the left side and above the umbilicus and the epigastrium. Temperature 101.5°, pulse 104, no vomiting during the day or night or to-day, and there had been no very great pain. No resistance could be felt, nothing in the way of tumor. It seemed to me it could not be anything else than appendicitis. Dr. Porter saw her and concurred in the diagnosis. The diagnosis having been made we both urged an early operation. The operation was done this afternoon at five o'clock. The striking features in the case in my mind were the very slight symptoms as compared with the gravity of the condition which Dr. Porter found. It was difficult to persuade the patient that she had serious trouble; there were no marked constitutional symptoms and yet the appendix was found to be gangrenous. I should have said that there was no special

tenderness, pain or sense of resistance at the so-called McBurney point at any time.

DR. C. B. PORTER: The case was extremely interesting because it had been induced, as the family thought, by indiscretion in eating an apple. I found, on examination, that there was more resistance to pressure over the region of the appendix, but there was also extreme sensitiveness to the touch on the left side above the umbilicus and just below the ensiform cartilage. Considering the temperature, the localization (especially at Dr. Folsom's first visit) in the right iliac fossa, and not being able to think of anything else it could be, it seemed to me wise to operate. The very extensive sensitiveness seemed to me indicative of a threatened general peritonitis (if it had not already started), with its origin probably in the right iliac fossa. I made an incision for the ordinary operation for removal of the appendix; and when I got down to the junction of the small with the large intestine, it was impossible to find any appendix. Upon turning the ascending colon upwards, I could feel the induration underneath, and upon dragging it all out, it was found that the appendix, which was very long, was drawn back and was all adherent on the posterior surface, but that there was no pus. As soon as I had discovered a band running off to one side, I commenced to dig it out with my finger a little, and then there came a puff of that foul gas, significant of anything gangrenous, and I said, "My finger has touched it if I have not yet seen it." Dissecting further I found I had the base of the appendix laid bare near the junction of the cæcum and ileum, and down further, behind the cæcum, was the rest of it so imbedded that I could not tell what was appendix and what were the surrounding parts. I passed an aneurismal needle underneath the base of the appendix, tied two ligatures and cut between. I then dissected it away, and at about the middle it broke entirely, it was so gangrenous, and left a piece deeply placed that had to be dissected afterwards. As soon as the bowel was cut the lumen at both ends was touched with a 95-per-cent. solution of carbolic acid to prevent infection. Finally, I succeeded in digging out the rest of the appendix. It is interesting to see the extent to which the destruction had gone. I have operated on a few cases as gangrenous as this, and one fully as much so within twenty-four hours, and it goes to show how important it is for cases which are suspected to be appendicitis to be thoroughly studied with reference to immediate operation.

DR. E. B. BRACKETT read a paper on

THE USE OF GYMNASTICS IN THE TREATMENT OF LATERAL CURVATURE.³

DR. E. H. BRADFORD: My views are so thoroughly in accord with Dr. Brackett's that it is hardly possible for me to discuss, as I agree with everything he has said. I think he has hardly laid stress enough on the fact, which I think he was one of the first to call attention to, that is, the necessity in cases of this sort of slight osseous change, of avoiding forward curving of the spine. To express it in more common language, what a patient with a rotary lateral curvature needs to do, if it is desired to correct the deformity, is to attempt to become what is known as a backward athlete, namely, that class of athletes who can bend the spine backward to a greater extent than is nor-

mally possible. Any one who has examined the back of one of this class of athletes will have noticed its peculiar character, namely, not only how symmetrical it is, but also how the physiological curves are diminished; and the exercises and practices which are necessary to produce this are what is needed in treating rotary lateral curvature with any osseous change. This is entirely independent of exercises for the development of muscles. Exercises for the development of muscle, as Dr. Brackett says, are useful and important to enable the patient to maintain a correct attitude; but for corrective exercises attention should not be paid so much to the muscles as to increasing the flexibility of the spine and the contraction of the limb muscles.

DR. E. M. HARTWELL: My belief is that ordinary gymnastics are worth nothing, or next to nothing, in the treatment of scoliosis, except in so far as they may be made serviceable in giving tone and power to the muscles of the back after the spine has been straightened, or its deformed curves reduced by other more appropriate and effective forms of procedure. By ordinary gymnastics, I mean school gymnastics and the various forms of light and heavy gymnastics that are taught or practised in most gymnasia. The ordinary gymnastic teacher or director is apt to be so wedded to mere "muscle-building" as to be a blind adherent to the doctrine that scoliosis is due chiefly to disordered or impaired muscular action. Any one who professes to treat a fully-developed scoliosis by means of customary gymnastic exercises, having only the resources of an ordinary gymnasium at his command — be that gymnasium never so completely equipped with pulley-weights and gymnastic machines — transcends his functions and promises what he cannot perform. Even the so-called medical gymnastics should be looked upon as an adjuvant therapeutic measure chiefly, and not, as so many uncritical enthusiasts would have us believe, as the sole or even the most effectual means of reducing or abolishing a scoliosis. I entirely agree with Dr. Brackett and Dr. Bradford in holding that muscular exercise alone is totally inadequate to the task of straightening a scoliotic spine in which any considerable degree of rigidity has declared itself. That school and recreative gymnastics, if they are well taught and diligently practised during childhood and the first stage of adolescence, are of great value in counteracting the deforming attitudes imposed so often on school children, and so far, both are efficacious in preventing scoliosis, I have not any doubt.

It cannot be gainsaid, I think, that the *Sjuk-gymnastik* of the Swedes includes many mechanical procedures, among those they call passive movements, that are capable of rendering efficient aid in increasing the flexibility of a not wholly rigid spine, so that its deforming curves may be corrected. If once the spine is redressed massage and active exercise of the atonic and atrophic muscles come into play as corroborative measures. When torsion is present, or anatomical changes have been wrought in the vertebræ and the vertebral ligaments, the work of supplying and redressing the spine is tedious and expensive, often extremely so.

The medical profession owes a debt of gratitude to Dr. Gustaf Zander, an acute and accomplished physician of Stockholm, for the patience and mechanical genius displayed by him during the last thirty years

³ See page 329 of the Journal.

in developing the so-called Mechanical Medical Gymnastics. Dr. Zander has invented and brought into use a series of some seventy machines, by means of which the appropriate effects of the more important active and passive movements embraced in the Swedish movement treatment can be secured more effectually, certainly and cheaply, where numbers of patients are concerned, than is possible under the conditions which usually obtain in the practice of medical gymnasts, be they never so skilful.

The Zander machines are divided into two main classes, namely: (1) those that afford active exercise to the patient, being set in motion by him; and (2) those that are actuated by a steam- or gas-motor, against the "passive resistance" of the patient. The first class includes thirteen machines for arm-movements; thirteen for leg-movements, and thirteen for trunk-movements. The second class includes five machines for distinctively passive movements, and thirteen for various, purely mechanical, manipulations. In cases requiring massage, Dr. Zander has recourse to manual massage, being of the opinion that machinery cannot be successfully substituted for the hand, in this branch of mechano-therapy. The construction of both classes of machines is such that the work required of the patient in overcoming resistance can be accurately measured and hence adapted to his strength and needs. In this respect the Zander machines are unequalled.

Dr. Zander has attained marked success in the treatment of scoliosis, through the use of his so-called orthopedic machines. These machines are ten in number and constitute a series quite distinct from those already mentioned. In the construction and use of his orthopedic machines for the purposes of correction and redressing, Dr. Zander employs devices to secure suspension, corrective posture, counter-pressure and counter-rotation in varying degree, according to the nature and state of the scoliosis present. He also has recourse to certain machines belonging to the two classes mentioned above, for the sake of restoring and increasing the action of the muscles concerned in maintaining the normal curves and position of the spine; but mechanical support by means of fixed bandage or corsets do not form a part of his treatment, though it well might, it seems to me.

As an aid to testing and controlling the effects of his treatment he makes frequent minute and searching measurements to determine the relations of the bony prominences of the spine, shoulders, thorax and pelvis to each other. The results of such measurement are plotted in the form of a mathematically constructed chart, and are of great practical value. In making the measurements alluded to Dr. Zander uses two very ingenious, and I must add expensive, measuring machines invented by himself; they are shown in the collection of pictures of the Zander apparatus, which I present for your inspection. One of them enables him to determine the amount of deviation of the spine both in the frontal and the sagittal plane measured in millimetres, and the other shows the contour of the thorax at any level that may be chosen — below the axillæ.*

In general, Dr. Zander's treatment of scoliosis accords in principle with that of Professor Lorenz of Vienna, except that the latter makes use of fixed bandages and of very cleverly constructed wooden-corsets, of which the specimen presented is a sample; while

Zander lays more stress on minute measurements for purposes of control than does Lorenz. Both Lorenz and Zander employ mechanical measures for corrective purposes, and muscular exercises for tonic and retention purposes after reduction has been in some measure secured. Lorenz employs forcible pressure or *redressement forces* in the manner shown on page 178 of Bradford and Lovett's "Orthopædic Surgery." Zander's method of applying forcible pressure and counter-rotation is less violent and more deliberate.

Zander's principal paper on the treatment of scoliosis is entitled, "Om Den Habituela Skolioseris Behandling Medels Mekanisk Gymnastik," and was published in the *Nordiskt Medicinskt Arkiv*, 1889, Band XXI, No. 22. The article, which is well illustrated, is in Swedish, but it is accompanied by an abstract in French. Nebel's "Bewegungskuren mittelst Schwedischer Heilgymnastik und Massage mit besonderer Berücksichtigung der mechanischen Behandlung der Dr. G. Zander, Wiesbaden, 1889, contains the best and fullest account that has yet appeared of Zander's contributions to mechano-therapy.

It is interesting to note that both Lorenz and Zander hold that the principal provoking cause of scoliosis, in those who are most afflicted by it, namely, growing school girls, is found in the faulty positions they are so often obliged to assume and maintain in writing. Indeed, Lorenz declares that "the majority of habitual scolioses are writing-positions become fixed." So far as I am aware there are no comprehensive statistics to show whether or not scoliosis is more frequent in the United States than it has been shown to be in Germany, Sweden and Denmark. It seems to me reasonable to suppose, however, that the proportion of scoliotic girls in our schools is needlessly great; since our vicious systems of teaching writing are frequently rendered doubly dangerous owing to the careless and unscientific way in which so many of our school-children are furnished with chairs and desks.

I have recently had occasion to study the seating of the children in the public schools of Boston. My observations confirm those of Dr. C. L. Scudder, who showed that the assortment of desks and chairs in respect to size, was quite inadequate to the hygienic needs of pupils. I have examined the chairs and desks in one hundred schoolrooms, taken at random and ranging in grade from the high school to the primary school. In only eighteen out of one hundred class-rooms did I fail to find gross misfits. Of the pupils seated in the remaining seventy-two class-rooms, no less than twenty per cent. were misfitted. By misfitted, I mean that either they could not place their feet flat upon the floor, or they had their knees in contact with the under surface of their desks. It seems to me hardly reasonable to expect that sixteen to eighteen minutes of gymnastic exercise daily, which is all that is permitted in our schools, should prove adequate to counteract the deforming tendency of vicious postures in writing and study, especially when so large a proportion of the pupils are forced for more than two hundred minutes a day to maintain exhausting and abnormal positions because of the neglect of the authorities to provide them with suitable desks and chairs.

DR. BRADFORD: One word in regard to the recording of lateral curvature. There is no question but that the Zander recording appliance is the best that exists for the purpose for which it is designed. There is one difficulty which has not been mentioned, and that is

* The construction and working of Dr. Zander's principal orthopedic machines was explained by the aid of pictures and diagrams.

true of all the recording appliances which have been hitherto exhibited, namely, that the record is made with the patient standing. It is absolutely impossible to fix a patient perfectly still while he stands during the marking of the record. Schultze has written upon this question, and he states that while the record is made the patient may alter his position a number of times. Of course, with great care, as no doubt Zander uses, fairly good results may be attained, but there is a very simple way of obviating all this and making records with simpler apparatus, namely, by having the records made while the patient is lying down. This gives a more accurate record of the rotation, and that is the most important record. In regard to the subject of Lorenz treatment with apparatus, I think what Dr. Hartwell has said in regard to the matter shows conclusively that Lorenz is right in claiming that mechanical gymnastics should be supplemented by the use of some appliances during the intervals of gymnastic exercises in all urgent cases.

In regard to the wood corset, it may be said that is one of the best that has been devised. It, however, has one disadvantage in our climate, and that is that it does not bear hot weather so well as some of the other forms; and personally I am inclined to think the paper corset which has been perfected by Dr. Weigel is superior to the wood corset.

DR. GOLDTHWAIT: I have been very much interested in the subject of gymnastics as applied to the treatment of scoliosis, and have watched with a good deal of interest the methods and the results obtained in the hands of pure gymnasts; and while I am a firm believer in gymnastics in these cases, both for muscular development and to increase the flexibility of the spine, at the same time I feel firmly convinced that they represent only a portion of the treatment, and that they must be supplemented by some apparatus. I was very much interested in seeing Dr. Zander's apparatus, and one cannot see it without being very much impressed by the mechanical ingenuity of the man; but at the same time it seemed to me that results equally good could be obtained with apparatus much less complicated and much more at the command of the average practitioner of orthopaedics than is Zander's apparatus, there being only one such institute in this country and that one in New York.

DR. BRACKETT, in answer to a question, said: The discussion has broadened somewhat from what I intended. I agree fully in relation to the lack of weakness in the majority of cases. At the Children's Hospital I have had collected every case that has been treated there for eighteen months, and we fail to find a marked or any appreciable weakness in the majority of these cases. It is true, however, that we find a good many of them coming on in young and growing girls, or after some exhausting disease, or during a period of a great deal of depression, in which very likely we can attribute it to more of a general lack of tone than to actual muscular weakness. On the other hand, we have not found a decided unilateral weakness, that is, we have tried to prove or disprove or to have observations upon the question of unilateral weakness, and so far the figures do not show enough of change to consider it of any value. With reference to the improvement in gymnastics alone, there is one condition I think we often meet with, that is a child who will come for treatment and be given purely a gymnastic treatment as we have tried as a matter of observa-

tion. There is no doubt that for a while there is a decided improvement. I have been led to think that that is due simply to the improved muscular tone, or else to the improved energy and pride of the patients by which they are able to hold themselves more correctly, that is, the effort is continued for so much longer a time that the general condition of the case seems improved. But as to the actual weakness for which the muscular development is claimed by certain people, I have never yet been able to find any basis for it.

Recent Literature.

Dissections Illustrated: A Graphic Hand-book for Students of Human Anatomy. By C. GORDON BRODIE, F.R.C.S. With plates drawn and lithographed by PERCY HIGHLEY. In four parts. London and New York: Whittaker & Co.

The author's plan has been to offer the student a series of pictures of dissections, with a few diagrams and some short descriptions. The plates are reduced one-third from the natural size. We have received the first and second parts, which treat of the upper and lower limb. The illustrations are beautiful. The dissections are of the standard type. There are no sections nor "window-cuts." The areolar tissue and fat have been removed and the parts shown according to time-honored practice. Deep dissections follow more superficial ones, so as to give the student the successive layers. Such being the lines on which the work is undertaken, we have nothing but praise for its execution by both the anatomist and the artist. T. D.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopœias of the United States, Great Britain and Germany, with numerous References to the French Codex. By ALFRED STILLÉ, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; JOHN M. MAISCH, Ph.M., Phar.D., Late Professor of Materia Medica and Botany in Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association; CHARLES CASPARI, JR., Ph.G., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore, and HENRY C. C. MAISCH, Ph.G., Ph.D. Fifth edition, thoroughly revised, according to the Seventh Decennial Revision of the United States Pharmacopœia. Imperial octavo, 1910 pages, with 320 engravings. Philadelphia: Lea Brothers & Co. 1894.

This encyclopedia of materia medica, therapeutics, pharmacy and the collateral sciences has, through the extraordinary energy of its editors and publishers, appeared only five months after the publication of the last revision of the United States Pharmacopœia, and but a single month after that official work went into legal effect.

As one of the best-known commentaries upon the United States Pharmacopœia, the late thorough revision of that work has necessitated a like revision in this commentary, yet the revision has been by no means restricted to such necessary changes, but the latest editions of the British, French and German pharmacopœias have been exhaustively searched for materials of

value, and ample space has been given to such, and to the new synthetic remedies and to the drugs, which although as yet unofficial in any pharmacopœia are being largely used. The present edition is thus more than one hundred pages larger than the previous one.

The descriptions of *materia medica* are clear, thorough and systematic, as are also the explanations of chemical and pharmaceutical processes and tests. The therapeutical portion has been revised with equal care and the statements of the action and uses have been arranged not only alphabetically under the various drugs, but for practical medical usefulness have also been placed at the instant command of those seeking information in the treatment of special diseases by being arranged under the various diseases in a therapeutical index. The readiness with which any of the vast amodnt of information contained in this work is made available is indicated by the twenty-five thousand references in the two indexes at the end of the volume.

For the physician and the pharmacist, for whose use it was specially prepared, this edition will no doubt prove to be more than ever valuable. B. F. D.

How to Use the Forceps. With an Introductory Account of the Female Pelvis and on the Mechanism of Delivery. By HENRY G. LANDIS, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in Starling Medical College, Columbus, O. Revised and enlarged by CHARLES H. BUSHONG, M.D., Assistant Gynecologist and Pathologist to Demilt Dispensary, New York. Illustrated. New York: E. B. Treat. 1894.

This book is divided into three parts: Part I, Mechanism of Labor; Part II, the Forceps; Part III, Application and Cases.

Part I is interesting not only as a sample of the way in which a single mind frequently strikes out new truths which meet too tardy acceptance, but also for its intrinsic worth. Although Dr. Landis's views of fifteen years ago are at variance with the accepted teaching of to-day in some minor points, as, for instance, in the importance which he ascribes to the parietal protuberances in the production of rotation, they are, in the main, in thorough accordance with the views now held by most progressive teachers. The exposition of the mechanism of labor contained in this little book is especially clear, and will be of value to every one interested in the subject.

Part II contains a set of excellent directions for the use of the forceps. It is clear, detailed and accurate, though some of the views expressed are perhaps not quite brought up to date. Most obstetricians of to-day would consider that the chapter on "When to Use the Forceps" is a little over-conservative.

The book so far is excellent, and will furnish valuable reading to any one interested in the subject. It is a pity that as much cannot be said for Part III, "Application and Cases," which adds but little to the book, is sketchy, and rather crude.

The printer and publisher have done good work.

Operation Blanks. Prepared by W. W. KEEN, M.D., Professor of the Principles of Surgery in the Jefferson Medical College, Philadelphia, Pa.

By filling up these convenient forms, instructions may be given to the nurse, the family physician and the attendant. The plan of operation blanks is a capital one, but we fancy that the majority of surgeons would prefer to select their own list of dressings.

THE BOSTON Medical and Surgical Journal.

THURSDAY, APRIL 5, 1894.

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ANTI-VACCINISM.

SCARCELY a year has elapsed during the past ten years in which the opponents of compulsory vaccination have not petitioned the Massachusetts Legislature for a repeal of the existing laws. The unusual prevalence of small-pox, and the consequent increased interest in vaccination during the present season, have led to a renewal of the opposition, and at least four hearings have been devoted to the subject by the Legislative Committee on Public Health. At the first hearing two of the petitioners spoke at considerable length. Their statements presented almost the same identical arguments which have been used for nearly a century in opposition to vaccination, and followed very closely after their predecessors, Birch and Rogers, who, as long ago as 1805, attempted to disprove the value of vaccination. The statements were made up chiefly of theory and denunciation, with such reasoning as the following:

"The vacciniest's statistics are worthless, and may be made to prove anything. You will find, if you look into this point of the controversy, that the vacciniest is hopelessly given over to a belief in the efficacy of vaccination, and that he constructs his statements unfairly, and solely with the view to support a preconceived opinion. After the mind has given itself up to this absurdity, all that follows is easy, and passes without scrutiny, without analysis."

As much as to say that the careful statistical investigations of the German Government upon this question (the most thoroughly vaccinated people in the world), together with those of the Local Government Board of England and those of the Hungarian statistician, Körösi, are all false and worthless.

One of these gentlemen made the remarkable statement that "vaccination increases small-pox." Dr. Alfred Russell Wallace attempted to prove the same proposition before the present Parliamentary Commission of England, but when asked by the Commission

to examine his figures more closely was compelled to retract his statements, and honestly admitted the worthlessness of his figures.

At the second hearing ten or a dozen persons presented testimony, prominent among whom was a member of the Boston School Committee (not, however, appearing as a representative of any action or sentiment of the Committee), who stated a considerable number of alleged injuries and deaths from vaccination, in not one of which was any evidence given that the alleged harmful results were anything more than a coincidence such as might occur in a very large number of vaccinations, and not necessarily a consequence of the operation.

Considerable stress was laid upon the death of Dr. W. Stokes, which occurred at the City Hospital in 1889, but which has been repeatedly shown to have had no connection with a previous vaccination in the relation of cause and effect.

At the third hearing, Ex-Attorney-General Pillsbury made a very brief argument for the petitioners, his principal point being that vaccination as a preventive against small-pox should not be compulsory, so long as similar preventive measures are not compulsory in the case of tuberculosis, rabies and other diseases.

A half-hour was then given to the remonstrants who supported the existing laws. Senator Buckley, of Holyoke, in a very convincing five-minute address, told the Committee of the practical necessity of vaccination in the paper-making, rag-consuming city of Holyoke, and of the defenceless position in which that city would be left without the protection afforded by the present statutes.

The fourth hearing was entirely devoted to listening to Mr. Pickering, an anti-vaccination missionary from London, who has spent considerable time during the past winter in Rhode Island, Indiana and Massachusetts as a vigorous opponent of vaccination. Much of his argument had little reference to the subject, consisting, as it did, of certain arrogant claims of ability to cure cases of small-pox in marvellously short periods of time by methods of his own. He appeared to be quite incensed at the city authorities, who would not allow him free admission to the Small-Pox Hospital of Boston.

It is quite remarkable that nearly all opponents of vaccination, not excepting those who have appeared at our State-House this year, in quoting foreign statistics, and especially those which relate to Germany, are wont to pass over in silence the period which has supervened since the Franco-Prussian War. As a matter of fact, the German compulsory law did not take effect till 1874, since which time small-pox has almost entirely disappeared from Germany, while the partially vaccinated neighboring countries have suffered severely from this cause.

On the day following the last hearing the Legislative Committee reported, "leave to withdraw."

As a comment upon this hearing before the Com-

mittee on Public Health of the Massachusetts Legislature, it is legitimate to quote the following from a very recent editorial in the *New York Times*:

"H. Hitchcock, M.D., writes to us from the executive office of the Anti-Vaccination League to ask a candid question, to which we will give a candid answer. 'Are you willing,' he asks, 'to open your columns to a discussion of the question of vaccination?' We reply: 'No,' for it would not be worth the doctor's while, nor ours. There is at the present day no question of vaccination except in the minds of the members of anti-vaccination leagues—gentlemen and ladies who are engaged with perfect sincerity, we have no doubt, in a futile attempt to head off human progress and to reopen a question about which pretty much all the world has made up its mind. The appeal of the American Anti-Vaccination League is, in our judgment, an appeal to ignorance and prejudice."

THE UNFAVORABLE SEQUELÆ OF CERTAIN RADICAL OPERATIONS ON THE GALL-BLADDER.

THE accidents and evils of biliary lithiasis are among the most general of all hepatic affections, being common to all nations and all climates. To rid the afflicted of these evils, three radical surgical operations have of late years been devised: cholecystotomy, cholecystectomy and cholecystenterostomy.

Cholecystotomy, first performed by J. L. Petit in 1748, in cases where the gall-bladder, distended by calculi, was attached by firm adhesions to the abdominal wall, afterwards (1859) proposed by Thudicum as worthy of wide extension, did not definitely obtain a place in modern surgery for the otherwise irremediable accidents of biliary lithiasis till the operation was successfully performed and advocated by Marion Sims in 1878. It is the simplest and safest of all the radical operations, is indicated in all cases of chronic lithiasis, attended with frequent attacks of hepatic colic and other troubles, where, on careful examination, there is found to be complete patency of the choledochus duct.

In this operation, an external fistula is established, by which there is an escape of bile, and the principal danger is that this fistula shall become permanent. This danger is emphasized by the author of a recent voluminous work on the liver, Labadie-Lagrave; such permanent fistulæ have occurred in the practice of Walker, Robeson, Terrillon, Tait and others, though infrequently, and Seymour, as the result of his personal experience, regards the danger as very slight, believing "that it is only when an obstruction in the common duct has been unrelieved that this can occur."¹ It cannot be said that "ideal cholecystotomy," in which the gall-bladder is opened and the calculi removed, then the organ is carefully sutured with catgut and restored to the abdominal cavity—it cannot be said that this procedure is to be recommended if, according to Langenbuch, it be attended with a very serious danger. The ductus choledochus, he says,

¹ Medical Record, December 6, 1890.

reacts to any excitation in a remarkable manner; this is the reason why this canal becomes swollen after the excitation caused by an operation, the tumefaction preventing the free flow of bile; there is a regurgitation of it, and the bladder fills up; finally the sutures give way and the bile is thrown into the peritoneal cavity, and the patient dies. Lawson Tait also, in a recent discussion on the surgery of the liver, regards "ideal cholecystotomy" and cholecystectomy "as based on fallacious reasoning and dangerous methods."² With regard to cholecystectomy, the principal reason why this operation should not be chosen in preference to cholecystotomy, *when the latter is feasible*, has been given above; and it seems agreed that the usefulness of cholecystectomy is limited to cases where the tissues of the gall-bladder are diseased and where this organ cannot be sutured to the abdominal walls.

Cholecystenterostomy is an operation of still more recent device, being first performed by Winiwarter in 1881, though Nussbaum, a year earlier, had conceived of the operation and advised it in the following words: "When the escape of bile through the natural duct is no longer possible, it will be practicable to make an artificial connection between the gall-bladder and intestine through which the gall can again escape into the intestinal tract." This operation, according to Murphy's statistics,³ had been performed by the old method of sutures twenty-three times up to December, 1893, with a mortality of thirty-five per cent., or eight deaths in twenty-three cases. Of the seventeen cases where the operation had been performed with Murphy's anastomosis button (from June 11, 1892 to December 1, 1893), there was in every instance a good recovery.

This record, of course, speaks favorably for the anastomosis button; but what the public would like to know more particularly is the after-history of the successful cases. Were these persons restored to a good degree of working vigor, or did serious infirmities follow? In one of Mayo Robson's cases, the gall-bladder was stitched to the colon; what was the effect on this patient of the constant diversion of the biliary secretion from the small intestine into which it is normally poured during a certain stage of the digestive process?

We have, fortunately, a full statement of results from a well-known member of the profession, who has lately gone through the operation for relief of jaundice by retention due to irremediable stenosis of the choledochus — we refer to the recent report of Dr. Dujardin-Beaumetz to the French Academy, March 13, 1894.

The patient, whose gall-bladder has been made to open into the intestine, is constantly menaced with biliary infection. In the physiological state, although the choledochus opens into the duodenum where microbes exist in abundance, yet owing to the peculiarities of its anatomical conformation, microbes rarely penetrate the duct; when there is a biliary fistula with a free communication between the gall-bladder and

intestine, the liability to microbic penetration and infection of the liver is much greater. This infection manifests itself by febrile accessions of a remittent or intermittent type.

There is also more or less intestinal dyspepsia, resulting from the fact that the biliary fistula opens into the intestine at a variable distance from the ampulla of Vater, and there is now want of concordance between the pancreatic and biliary secretions. Gastric dyspepsia, more or less intense, is certain to follow; this is likely to take the form of acid dyspepsia (hyperchlorhydria).

For the hepatic infections and the febrile symptoms resulting, Beaumetz advises intestinal antiseptics by salol and the administration of quinine in lavements. When there is acid dyspepsia, fifteen grains of bicarbonate of soda may be given one hour before meals. The diet should be mainly vegetable. It must, however, be borne in mind that the subject of this kind of biliary fistula will never be in a really normal condition again, either in respect to digestion or nutrition, but "they will be enabled to live, and in conditions relatively favorable, thus deriving incontestable advantages from surgical intervention."

MEDICAL NOTES.

SMALL-POX IN CHICAGO. — The number of cases of small-pox reported to the Board of Health of Chicago for the month of March was as large as that for both January and February combined.

ATTEMPT TO BURN A HOSPITAL. — The third attempt within a short time to burn the Topeka City Hospital occurred recently, but the fire was discovered in early season and no serious damage was done.

A VICTIM OF PROFESSIONAL ENTHUSIASM. — Dr. Adolf Meyer, assistant in the Schonborn's clinic at Wurzburg, died recently from diphtheria contracted in doing tracheotomy. The tube became obstructed by membrane; and to save the patient from asphyxiation Dr. Meyer put his mouth to the canula and cleared it by aspiration. He died a few days later.

SOAP AND WATER IN GLASGOW. — In a lecture at the London Institute, on "The Chemistry of Cleanliness," Prof Vivian Lewes said, when speaking of the wasteful action of hard water on soap: "The introduction of the new Loch Katrine water-supply to Glasgow has saved the city several thousand dollars a year in soap; and, mind you, Glasgow is not a place where they waste soap."

INCREASE IN SUICIDES IN NEW YORK CITY. — The mortality reports of the New York Board of Health show that while the total mortality of the city has risen since 1883 from 34,011 to 44,370 per year, the number of suicides has increased from 161 to 313. In the last ten years, while the general mortality has increased about one-fourth, the mortality from suicide has increased nearly one-half.

² Edinburgh Medical Journal, October, 1893.

³ Medical Record, January 13, 1894.

TYPHOID FEVER EPIDEMIC AT MONTCLAIR, N. J. — An outbreak of typhoid has occurred at Montclair, N. J., some thirty families having one or more patients each. Nearly all the cases are said to have occurred among the customers of a single milkman, in whose family two cases of typhoid fever are known to exist. The Board of Health has forbidden the sale of milk from this source.

LIQUOR RIOTS IN SOUTH CAROLINA. — The working of the new State Dispensary Law in South Carolina is not satisfactory to the people of that State, or at least to a certain proportion of them; and last week several riots occurred in various parts of the State between the people and the State police. At Florence a mob broke into the State Dispensary and destroyed the entire stock of liquors.

FIVE MALE GENERATIONS. — The five female generations recently reported in this column have their counterpart in a family in an English village where, according to the *Medical Press*, there are now living the following members of one family: T. D., aged ninety-seven; G. D., his son, seventy-three; G. D., Jr., grandson, forty-eight; J. D., great-grandson, twenty-six; and G. D., great-great-grandson, six years old.

SUICIDE IN THE GERMAN ARMY. — The number of suicides in the German army is 6.33 in every 10,000 men; while in the French army it is but 3.33, and in the English 2.09. Saxony and Silesia furnish the largest number of suicides. According to the published statistics, the causes lie, aside from the natural suicidal tendency of the German race, in the fear of punishment and the wretched treatment the private soldier has to endure.

DEATH OF COMMANDER CAMERON. — Commander Verney Lovett Cameron, who was sent out to Africa by the Royal Geographic Society in search of Dr. Livingstone, was killed last week by a fall from his horse while hunting in Bedfordshire, England. He was the first European to cross the entire breadth of the African continent, in its central latitudes, beyond the western shore of Lake Tanganjika, to the Atlantic sea-coast of lower Guinea, making the greater part of the journey on foot.

AN INCIDENT OF THE CHOLERA AT JEDDA. — An astounding instance of the unconcern which was shown towards the loss of life by cholera during the pilgrimage in the East last summer has come to light in the sentence by an English court of the captain of a vessel conveying pilgrims home from Mecca and Jedda. In a storm many were washed overboard and others died of disease, nearly two hundred in all perishing. The captain made no mention of this in his log, for which omission he was fined twenty-five dollars.

DAMAGES FOR INVALIDISM FROM SHOCK. — The Supreme Court of Minnesota has ruled, that where the evidence tends to show that prior to sustaining a personal injury a woman was healthy and active, but by such injury is rendered a helpless invalid, an award of

\$10,000 damages is not so large as to warrant a reviewing court in saying that they are excessive. In the case on trial the injury for which damages were awarded was in itself slight, but medical testimony supported the plaintiff's claim that the nervous shock resulted in cardiac and neurotic disease.

THE INTERNATIONAL MEDICAL CONGRESS. — Harold Frederic, in his London letter in the *New York Times* of April 1st, says of the International Medical Congress in Rome: "Italy may be wallowing in the mire of poverty, but she manages none the less to give the International Medical Congress the finest reception it has yet had in Europe. Not much money has been spent; but the King and Queen, Crispi, and the Court have been prodigal of personal attention and interest, which had a much greater effect than mere financial lavishness. Visiting doctors, both English and American, write me in terms of almost excited enthusiasm over their experiences in Rome, where they are treated as the guests of the whole city." As the Congress met on March 29th, Mr. Frederic's correspondents must have written very promptly on going home from their pleasant reception.

THE MICHIGAN STATE BOARD OF HEALTH AND TUBERCULOSIS. — The Michigan State Board of Health, in adopting its rule that hereafter all cases of consumption or other diseases due to the bacillus tuberculosis shall be reported by householders and physicians, has acted in a most rational manner in calling attention at the same time to the fact that isolation of the patient is not looked for or expected. The sole purpose of the new law is to secure to the various boards of health information of the locality occupied by each person affected with tubercular disease, with the view of giving him trustworthy information as to how he may avoid re-infecting himself and infecting others, and telling persons most endangered how to avoid contracting the disease. In a similar manner, the New York State Board compels the registration of all tuberculous persons, but does not attempt sanitary visitation and disinfection except under certain conditions. The Philadelphia Board does not require registration, but simply attempts an active educational campaign in the matter of preventing the disease.

THE PRACTICE OF MEDICINE IN MAINE. — A correspondent sends us the following clipping from the Rockland (Me.) *Courier Gazette*, concerning the social and financial status of the physician in one of the small island towns: "There is talk of getting up a time to raise money to help keep our doctor here another year. He cannot stay on what practice he gets, and we cannot afford to have him go. The most of us know what it is to go to the main and Carver's Harbor for doctors. Let's wake up and get up a good time and raise what money we can for the good cause!"

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, April 4, 1894, there

were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 38, scarlet fever 58, measles 4, typhoid fever 2, small-pox 6 and 3 deaths (all in unvaccinated persons). There are now twelve cases at the small-pox hospital on Canterbury Street, and three cases at Gallop's Island. No cases were reported to the State Board of Health from places elsewhere in the State.

BEQUEST TO THE LYNN HOSPITAL.—The Lynn Hospital and the Home for Aged Women have each received a bequest of one thousand dollars, by the will of the late Edward H. Johnson, of Lynn.

THE POPULATION OF BOSTON AND ITS VALUE.—According to the *Census Bulletin on Finances of Municipalities*, just issued at Washington, the population of Boston is 448,477, and the assessed valuation of real and personal property in the city is \$822,041,800, which is an assessed valuation of \$1,832 *per capita*, not including the Public Library twins, who possess no personal property.

NEW YORK.

THE ACADEMY COMMITTEE AND THE BILL FOR A NATIONAL BUREAU OF HEALTH.—On March 28th a delegation of the New York Academy of Medicine, among whom were Drs. William H. Thomson, George F. Shrady and Richard H. Derby, went to Washington and argued before the House Interstate Commerce Committee in favor of the Academy's bill to establish a National Bureau of Public Health. Dr. T. Gaillard Thomas, the chairman of the committee of the Academy having the matter in charge, was not able to leave New York, and a paper prepared by him was read by Dr. Derby.

TUBERCULAR MENINGITIS FROM MILK.—An apparently well authenticated case of tubercular meningitis, the direct result of drinking milk from a tuberculous cow, is reported from Yonkers. The patient, the four-year-old son of Mr. William A. Harper, of the publishing house of Harper & Brothers, who married a granddaughter of the late Rev. Henry Ward Beecher, gave no sign of ill health until the 1st of March, when the family physician was called in. The symptoms presented were those of tubercular meningitis, and later the diagnosis of this disease was confirmed by Dr. M. A. Starr, Professor of Diseases of the Nervous System in the College of Physicians and Surgeons of New York, who was called in consultation. The child died March 27th. The milk used by the family was supplied by two fine Alderney cows which were purchased about a year ago, and which had always seemed to be perfectly healthy. After the child's death, however, the Koch lymph test was applied by Veterinary Surgeon J. B. Lamkin, and the presence of tuberculosis was indicated in both animals by the rise of temperature following the injection. A careful examination also revealed evidences of tuberculosis in the udder of one of them; and it is claimed by Dr. Brush and other authorities that the milk of a tuberculous animal cannot convey the disease unless the mammary gland

is affected. It is stated that several weeks ago Dr. Lamkin reported to the Board of Health that he had found tuberculosis among the cattle of Yonkers.

Miscellany.

PERFORATION OF THE HEART, WITH CONTINUANCE OF LIFE FOR THIRTEEN HOURS.

AN unusual case of prolonged existence with a perforated heart is reported by Dr. Thompson, of San Bernardino, Cal.¹ The man was a Mexican, twenty-nine years old, five feet seven inches in height, weighing one hundred and sixty pounds. After the shooting he complained of internal pain over the abdomen and of great thirst. He was given morphia subcutaneously for the pain and shock, and was carried by wagon and train to San Bernardino, a distance of some length. He died a few moments after reaching the hospital, *thirteen hours* after being wounded.

The autopsy, four hours later, showed "a bullet-hole two and-a-half inches inside and one-third of an inch below the centre of the nipple line; size of wound at point of entrance, five-sixteenths of an inch, almost round. The bullet penetrated the cartilage of the sixth rib, near its juncture with the rib, breaking it, and chipping a small piece out of the upper part of the seventh rib. Entering the pleural cavity, the course of the ball was downwards and slightly inwards; this cavity was filled with blood. Passing through right side of the pericardium, penetrating the right ventricle of heart, one-and-a-half inches from apex, it passed through the anterior wall, severing the right coronary artery. Leaving the heart, the ball passed directly downward, penetrating the diaphragm, entering and passing through the left lobe of the liver from above downward, entering the small intestines. The ball having perforated the wall of the intestines, followed them through their action, and was found about two inches up the rectum."

HYPNOTIC SUGGESTION IN THE CURE OF ASTHMA.

THE astonishing effect of hypnotism in the relief of symptoms is well illustrated by a case of asthma reported by Creed.¹

The patient had received very little benefit from treatment of any kind, even "Himrods' Asthma Cure, which was resorted to by the late Earl of Beaconsfield during his last illness," failing to more than mitigate the paroxysms. He was hypnotized daily for ten days, and appropriate suggestions made. On the third he was much relieved, and slept on only one pillow; while on the tenth he was free from respiratory distress, and could walk with considerable speed.

Nevertheless, the cure was not perfected, as he has occasional modified attacks of dyspnoea so that he is now provided with a written order "to sleep when he reads it and to awake after five minutes, breathing freely." This he always carries, and says that it never fails him. There are numerous polypi in both nostrils, which have not been removed for fear of making the cure by hypnotism questionable.

¹ Southern California Practitioner, February, 1894.

² Australasian Medical Gazette, June, 1893.

Correspondence.

PROPOSED REDUCTION OF THE ARMY MEDICAL CORPS.

AN ATTEMPTED LEGISLATIVE OUTRAGE.

MR. EDITOR:—It is with indignation that all lovers of justice will look upon the latest endeavor of certain members of Congress to injure the efficiency of the Medical Corps of the United States Army by reducing its numbers 35 men.

This measure, now pending, is a buncombe attempt to gain credit for economy with political constituents; and the medical men are selected for attack because they, and more is the pity, do not combine politically for self-defence, and are therefore a safe mark. In this case the bill is a most insulting one to these honorable physicians, implying as it plainly does that 35 of their number draw pay without earning it.

It is well that the facts of the case should be clearly formulated. The Army Medical Corps consists of 193 members, attending to various hospital routine work, drilling the hospital corps detachment in field and other duties, and ministering to the medical and surgical needs of the 28,000 soldiers, constituting the present United States Army; and also attending their wives and families; a total of soldiers and adult male civilians at United States Army posts being to-day 43,431.

These 193 doctors are scattered over an area greater than all Europe, and divided among the 120 military posts.

In event of field duty at any time, it is plain that one surgeon, at least, must accompany the troops, from each post, and another should stay behind to take medical supervision of the hospital and of the women and children. It will thus be seen how small—even too small—is the present corps. Moreover, it occasionally happens that a doctor (being human) falls ill; and thereby reduces the effective list. Several are thus incapacitated at this time. And again, the law permits officers to take a month's vacation in each year without loss of pay. Therefore this reduces by one-twelfth the list actively on duty, and about 16 medical officers are thereby relieved for a time. As a matter of fact, such is the pressure of duty that the Surgeon-General must often refuse this well-earned vacation, compelling continual duty.

A simple calculation will suffice to show that these various factors, and the present five vacancies, reduce the number of the active medical corps much below its nominal strength of 193 members; and should the present bill removing 35 more become a law, a grievous injury will be inflicted, not only on the efficiency of the corps, but also on the soldiers and their families, who must look to the United States Medical Corps for attendance in sickness.

If it be alleged that contract surgeons—civilians—might be appointed to fill these vacancies at a lower cost, the reply is obvious; that there is now no appropriation made for contract doctors, though formerly this was the case; and even if there were, there is no provision of law whereby they can be placed in charge of the medical department at a military post. Therefore they cannot take charge of the discipline and field drill of the hospital corps detachment, nor be responsible for the post hospital with its supplies. To effect economy as far as practicable, the Surgeon-General has long employed only private physicians at all the arsenal posts in the country; these being small ones. A further grinding down of medical estimates is worthy of the hearts and intellects from which the thought emanates.

Should this bill pass, it will, of course, stop the operation of the new Army Medical School which is doing such good work and which employs itself with the special education in sanitation of hospitals and troops, commissary knowledge, bacteriology, military surgery and other subjects urgently needed by the new men among the assistant surgeons.

No further comment is needed save the statement that

upon March 15th, the Commanding General of the United States Army, Gen. J. M. Schofield, addressed a letter to the Secretary of War stating that this bill would be "seriously injurious to the Military Service," also "the Medical Corps of the Army is none too large for the necessities of the Service." And yet it is considered likely that this measure will pass the House! MEDICUS.

METEOROLOGICAL RECORD.

For the week ending March 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermoni- eter.		Relative humidity.			Direction of wind.		Velocity of wind.		Weath'r. *		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.		8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
					8.00 A. M.	8.00 P. M.								
J..18	30.16	50	62	38	61	87	74	S.W.	S.W.	5	16	F.	O.	0.04 0.03 0.46
M..19	29.82	62	70	53	88	60	74	S.W.	N.W.	15	13	F.	O.	
T..20	30.28	42	47	37	43	58	50	N.	N.	14	11	O.	F.	
W..21	30.14	41	45	37	74	100	87	S.E.	N.E.	10	4	O.	F.	
T..22	30.00	44	52	35	76	91	84	S.	N.E.	1	19	O.	F.	
F..23	29.76	40	46	34	49	62	48	S.E.	W.	19	9	R.	O.	
S..24	30.16	36	43	30	35	69	52	N.W.	S.E.	13	8	C.	C.	
☞	30.06	52	38				71							0.55

* O., cloudy; C., clear; F., fair; U., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 24, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.	
New York	1,691,306	373	377	18.26	16.28	7.48	1.98	3.19	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	394	153	16.25	14.25	4.00	1.25	2.00	
Brooklyn	978,894	326	121	19.60	20.40	7.80	4.40	1.60	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,387	235	78	13.33	19.35	5.59	1.72	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	120	37	9.11	26.56	3.32	—	—	
Cincinnati	305,000	133	44	10.50	13.50	3.00	—	—	
Cleveland	200,000	95	33	16.75	11.55	4.20	1.05	3.15	
Pittsburg	263,709	—	—	—	—	—	—	—	
Milwaukee	250,000	49	43	23.44	19.04	2.24	—	3.36	
Nashville	87,764	30	8	10.60	3.33	—	—	—	
Charleston	65,165	32	9	8.39	12.52	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	25	8	12.00	16.00	8.00	—	—	
Fall River	87,411	53	21	24.57	26.40	1.89	—	3.78	
Lowell	87,191	38	14	3.03	27.27	—	—	—	
Cambridge	77,109	24	12	12.45	20.80	4.16	4.16	—	
Lynn	62,858	14	5	11.28	30.70	—	—	—	
Springfield	48,684	3	8	—	3.33	—	—	—	
Lawrence	48,355	21	11	—	9.52	—	—	—	
New Bedford	45,888	10	4	10.00	20.00	—	10.00	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	11	1	9.09	9.09	9.09	—	—	
Brockton	32,140	12	3	—	—	—	—	—	
Haverhill	31,396	13	5	—	6.79	—	—	—	
Chelsea	30,264	—	—	—	—	—	—	—	
Malden	29,394	8	1	—	25.00	—	—	—	
Newton	27,566	8	2	—	—	—	—	—	
Fitchburg	27,146	9	1	—	—	—	—	—	
Taunton	26,972	6	6	—	—	—	—	—	
Gloucester	26,688	13	6	7.69	—	—	—	—	
Waltham	22,068	8	0	—	—	—	—	—	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,802	2	2	—	—	—	—	—	
Everett	16,585	9	3	22.22	11.11	—	—	—	
Northampton	16,381	3	0	—	—	—	—	—	
Newburyport	14,073	—	—	—	—	—	—	—	
Amesbury	10,920	5	1	—	40.00	—	—	—	

Deaths reported 2,642; under five years of age 1,015; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 393; diphtheria and croup 145, measles 47, scarlet fever 47, diarrhoeal

diseases 46, whooping-cough 32, typhoid fever 32, small-pox 15, cerebro-spinal meningitis 15, erysipelas 10, malarial fever 4.

From diarrhoeal diseases New York 20, Fall River 7, Philadelphia 6, Brooklyn and Nashville 4 each, Washington and Cincinnati 2 each, Boston 1. From whooping-cough New York 8, Brooklyn 7, Philadelphia 5, Washington 4, Fall River 2, Boston, Cincinnati, Nashville, Charleston, Cambridge and Gloucester 1 each. From typhoid fever Cincinnati 7, New York 6, Philadelphia 5, Cleveland 4, Milwaukee and Charleston 2 each, Boston, Washington, Fall River and Lowell 1 each. From small-pox New York 7, Brooklyn 4, Boston 3, Lynn 1. From cerebro-spinal meningitis New York 5, Cleveland 3, Milwaukee 2, Boston, Worcester and Lynn 1 each. From erysipelas Boston 4, Brooklyn 3, New York 2, Somerville 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 10th, the death-rate was 19.9. Deaths reported 3,983; acute diseases of the respiratory organs (London) 434, whooping-cough 145, measles 111, diphtheria 82, scarlet fever 52, fever 39, diarrhoea 30, small-pox (Bradford 4, West Ham 3, Birmingham 2, Bristol, Oldham and Leeds 1 each) 12.

The death-rates ranged from 11.1 in Huddersfield to 25.1 in Liverpool; Birmingham 17.4, Bradford 18.9, Bristol 20.9, Croydon 17.2, Hull 16.9, Leeds 17.2, Leicester 19.3, London 20.4, Manchester 21.7, Newcastle-on-Tyne 19.6, Nottingham 14.9, Oldham 18.8, Portsmouth 14.6, Salford 22.0, Sheffield 19.1, West Ham 20.1, Wolverhampton 23.9.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 17th, the death-rate was 19.2. Deaths reported 3,855; acute diseases of the respiratory organs (London) 373, measles 124, whooping-cough 118, diphtheria 71, scarlet fever 47, fever 39, diarrhoea 34, small-pox (Birmingham 8, London 3, West Ham 2, Cardiff and Oldham 1 each) 15.

The death-rates ranged from 12.1 in Croydon to 25.6 in Liverpool; Birmingham 19.3, Bradford 18.6, Bristol 20.5, Leeds 18.2, Leicester 16.8, London 19.3, Manchester 21.1, Newcastle-on-Tyne 12.1, Nottingham 16.3, Sheffield 18.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 24, 1894, TO MARCH 30, 1894.

By direction of the President, LIEUT.-COL. SAMUEL M. HORTON, deputy surgeon-general, will report in person to the President of the Army Retiring Board at San Francisco, Cal., for examination by the board.

CAPTAIN WILLIAM R. HALL, assistant surgeon, is relieved from duty as attending surgeon and examiner of recruits at San Francisco, Cal., to take effect upon the completion of his examination for promotion and will then report in person to the commanding officer, Whipple Barracks, Arizona Territory, for duty at that post.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, April 9, 1894, at 8 o'clock, P. M. Drs. M. H. Richardson and G. L. Walton: "The Operative Treatment of Spasmodic Wry-Neck." Discussion opened by Drs. C. B. Porter and J. J. Putnam.

Under oral communications Dr. W. L. Burrage will report "A Case of Tuberculosis of the Female Bladder, Diagnosed and Treated by Howard Kelly's New Method of Direct Inspection and Catheterization of Ureters through Large Endoscopes."

JOHN T. BOWEN, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting will be held at 19 Boylston Place, on Saturday, April 28, 1894, at 8 P. M.

Papers.—Dr. F. S. Watson, "Some of the Clinical Features and the Surgical Treatment of Primary Tuberculosis of the Urinary Organs." Discussion by Dr. P. Thorndike and others. Dr. F. H. Williams, "Diphtheria." Dr. W. A. Morrison, "The Value of the Stomach-Tube in Feeding after Intubation"—based upon twenty-eight cases. Discussion by Dr. F. B. Harrington, Dr. Gannett, Dr. C. M. Whitney and Dr. Prescott.

Business.—Report of the treasurer and the librarian. Election of officers. Appointment of delegates to the American Medical Association.

Supper after the meeting.

A. L. MASON, M.D., President.

JAMES J. MINOT, M.D., Secretary.

PHILADELPHIA PATHOLOGICAL SOCIETY.—The semi-annual conversational meeting of the Philadelphia Pathological Society will be held in the upper hall of the College of Physicians Building, Thirtieth and Locust Streets, on Thursday, April 26th, at 8 P. M.

Dr. Simon Flexner, Associate in Pathology in the Johns Hopkins Medical School, will deliver an address entitled "An

Experimental Study of the Nature and Action of Certain So-called Toxalbumins." Members of the medical profession are cordially invited to be present.

AUGUSTUS A. ECHNER, Secretary.

THE CARTWRIGHT LECTURES.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons for 1894, will be delivered at the New York Academy of Medicine, No. 17 West 43d Street, on Wednesday evenings, April 4th, 11th and 18th, at 8 o'clock, by Prof. Russell H. Chittenden, Ph.D., of Yale University.

Subject: "Digestive Proteolysis." I. General Nature of Proteolytic Enzymes; General Nature of Proteids. II. Proteolysis by Pepsin—Hydrochloric Acid—with a Consideration of the General Nature of Proteoses and Peptones. III. Proteolysis by Trypsin; Absorption of the Main Products of Proteolysis. Physicians are cordially invited to be present.

FRANCIS P. KINNICUTT, M.D.,

WALTER B. JAMES, M.D.,

D. BRYSON DELAVAN, M.D.,

} Committee.

MUTTER LECTURESHIP OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The next course of ten lectures under the bequest of the late Prof. Thomas Dent Mutter, M.D., LL.D., "on some point or points connected with Surgical Pathology" will be delivered in the winter of 1896-97, before the College of Physicians of Philadelphia. Compensation \$600. The appointment is open to the profession at large. Applications, stating subjects of proposed lectures, must be made before July 1, 1894, to

WILLIAM HUNT, M.D.,

Chairman, Committee on the Mutter Museum,
8 E. cor. 13th and Locust Sts., Philadelphia, Pa.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, April 11th, at 8 o'clock, by Dr. F. C. Knapp. Subject, "Traumatic Nervous Affections." Physicians are cordially invited.

RECENT DEATH.

EDWARD BROWN-SEQUARD, M.D., died in Paris, April 24, aged seventy-six years. He was born in the island of Mauritius, but received his medical education in Paris, graduating in 1840, at which time he had already acquired considerable reputation as an experimental physiologist. He received five prizes from the French Academy, and twice received the queen's grant for the encouragement of science from the British Royal Society. He engaged in the practice of medicine in Mauritius until 1864, when he travelled extensively in England and in this country, lecturing and giving private medical instruction. In London he did much work as the head of the Hospital for the Paralyzed and Epileptic. In 1864 he was made Professor of the Physiology and Pathology of the Nervous System in the Harvard Medical School, a position which he held for four years. In 1869 he returned to France, where he was appointed professor in the School of Medicine at Paris, and in 1873 came back to the United States and began practice in New York, and with Dr. Seguin commenced the publication of the "Archives of Scientific and Practical Medicine." After a short residence in London he returned to Paris where he has since resided. In 1878 he succeeded Claude Bernard as professor of experimental medicine at the College of France. In 1881 he was awarded the Baly Medal by the Royal College of Physicians of London. He was for several years president of the French Academy of Sciences. He wrote much and was a most enthusiastic investigator in questions of physiological medicine. Among his published volumes are "Lectures on the Physiology and Pathology of the Nervous System," "Paralysis of the Lower Extremities," "Lecture on the Nervous Affections." He established in Paris the *Journal de la Physiologie de l'Homme et des Animaux*. A few years before his death he discovered the true elixir of life which should rejuvenate and prolong human existence.

BOOKS AND PAMPHLETS RECEIVED.

Retinitis Albuminuria. By L. Webster Fox, M.D. Reprint. 1894.

A New Dynamometer for Use in Anthropometry. By J. H. Kellogg, M.D. Reprint. 1894.

Tuberculosis in Relation to Animal Industry and Public Health. By James Law. Reprint. 1894.

Original Articles.

THE CHARLES RIVER IN ITS RELATION TO THE ETIOLOGY OF INTERMITTENT FEVER.¹

BY R. W. GREENLEAF, M.D., BOSTON.

THE etiology of intermittent fever is so little understood to-day, that, excepting that a micro-organism has been discovered in the blood of patients suffering with the disease, we know but little more about it than did our predecessors of fifty years ago. Indeed, as evidenced by certain articles in our journals and discussions in our medical societies, it would appear that we do not know as much.

With our present knowledge of micro-organisms it is a little singular that this corner of medical literature should still be clothed with the phraseology of the past, oftentimes containing a partial truth, but so imperfectly expressed as to be misleading and inadequate for practical purposes.

Not a few writers are still urging, in otherwise excellent papers, hypotheses as diverse from each other as inconsistent with observed facts.

Among supposed causative agents we still hear of "atmospheric conditions," "marsh miasma," "river mists," "sewage contaminations," etc.; also that intermittent fever is an "exotic of tender growth," a "stranger in this part of the country," and the like. It would be of the greatest interest if some one could present a perfectly demonstrated theory of the whole course of events, from the taking of the causative agent from its habitat outside the body to its mode of entrance into the body, and through the various stages of its history in the body. The difficulties in the way of so complete a demonstration are so great that I am encouraged to present the following views as to this question, which, though not wholly proven, will serve to co-ordinate distinct data and to give us a "working hypothesis," sufficiently complete for practical purposes. They were derived from a study of the conditions found during a house-to-house inquiry along the banks of the Charles River in the vicinity of Boston, and from a comparison of the data thus ascertained with the reports of observers elsewhere.

In common with other regions in and about Boston, intermittent fever has not been present in the area under consideration for a long time, until within the past six or eight years. A common impression prevails that the Charles River is in some way responsible for its introduction. For instance, even in the utterances of the profession, we hear of the disease "creeping up the valley of the Charles." The offensive conditions due to the refuse of various factories, starch, grease, etc., also the sewage contaminations and the exposure of mud flats have all been held responsible as at least having furnished a nidus for a causative agent "introduced from elsewhere." There is no question that each of these unsanitary conditions has existed, though some of them have since been removed. My studies have led me to conclude that there is equally no question that none of these conditions are causative agents, *per se*; moreover, that we need not look elsewhere to find the offending cause. In other words, that it is right here at home, has been here all along, and is likely to show itself (as it has of late with us), just as it does elsewhere, whenever we establish the

conditions of its existence and introduction to our bodies.

Before presenting these views in detail, permit me to call to your attention what appears to be a fully demonstrated law applicable to, and most useful in the study of the causes of epidemics; namely, that when a cause is general in nature, such as the contamination of a water-supply, as in the case of the cholera epidemic in Hamburg, that the distribution of the cases, when plotted on a map, is widespread, and shows what may be called a markedly characteristic "curve." This is most graphically shown in the data furnished by Professor Sedgwick in the last Report of the State Board of Health, which marks an era in the American study of epidemiology. I will pass about the maps showing the distribution of typhoid fever in Lowell and Lawrence. In these cases the cause was fully demonstrated. Furthermore, since the measures suggested by the Board were adopted in the city where their advice was fully taken, typhoid fever has practically become non-existent. On the other hand, locally acting causes give rise to cases which when plotted are seen to present an equally characteristic "curve." Professor Sedgwick has also demonstrated this in connection with epidemics in which the milk-supply was shown to be the probable agent in the spread of the disease. (See same Report.)

To apply this law to the conditions under consideration, Townsend's exhaustive analysis of the 106 cases in Boston in 1892 shows that two areas were particularly affected, namely, the South Cove and the West End near Poplar and Brighton Streets. He did not explain their distribution. He simply considered that many of them were imported, as from the Newtons; but the points applicable to our inquiry are that he does not report any cases immediately along the river's bank, moreover, that his cases were for the most part grouped around local centres. In the discussion following Dr. Townsend's paper, Dr. John Homans, 2d, referred to a few cases occurring on Marlborough Street, subsequent to the digging up of the street. These, with a single exception on Beacon Street, are the only cases I heard of as having originated near the water front. Further negative evidence as to the river being a causative agent for Boston's cases is that the park police, who pass a considerable part of their time along the Charles-bank have had no cases of the disease among their number. That this is not a question of their lack of susceptibility is evidenced by the fact that several of them were ill with it during the war.

Careful inquiry for some distance along the banks failed to find a single case; though in places unsanitary conditions were found, yet intermittent fever was unknown. Several families had lived in the same places for many years, even twenty and thirty, and had been free from malarial disease. The first locality I found affected was at Barry's Corner. Here in a damp neglected settlement, six cases had occurred within the past three years. An interesting fact was, that still nearer the river, on the same marsh, was a more cleanly and drier settlement. In this place those of whom I inquired knew of no cases.

No other cases of importance were found on this side of the river until reaching Watertown. Here in an extremely unsanitary area, including two sub-areas near at hand, about a dozen cases were found. It is noteworthy that in this area seven of Watertown's nine cases of diphtheria and one case of her seven cases of

¹ Read before a meeting of the Cambridge Society for Medical Improvement, February 26, 1894.

scarlet fever had occurred since the first of the year. Further along the river were cases close by a pond whose level had recently been much lowered. Still further along, in a particularly dry and apparently healthy place, the only case near at hand was in the person of a gentleman whose occupation called him daily to a particularly damp part of Newton. As you are aware (and the details will doubtless be presented this evening), there have been a great many more cases in the Newtons away from the river's banks than in its immediate neighborhood. Some occur near ponds and some occur on hillsides, but their relative infrequency near the banks of the river certainly tends to show that the river, *per se*, is not a causative agent.

The last cases to which I would especially call your attention on the south side of the river, occurred among workmen engaged in digging up around a brook (the Cheese-Cake Brook) in connection with sewer improvements. Five or six men were affected during the summer of 1892, when the soil was first dug up.

Following down the north bank, a very similar outbreak occurred among workmen engaged in "improving" a large estate in Waltham near the Watertown line. It is to be noted in passing that they were digging up what was practically a primeval soil, that is, undisturbed, damp, forest soil.

Along this north bank long stretches were found with no, or only a few cases. In the mills and at the arsenal about one in fifty persons had had the disease, but they were found to live in some especially malarious centre elsewhere.

Passing down to Cambridge, a very interesting relation was found, similar to that referred to on the south bank, namely, a far less number of cases near the river than at a distance from it. You will recall the valuable paper of Dr. Stevens on "Malaria in Cambridge and Vicinity," published in the *Boston Medical and Surgical Journal*, December 29, 1892. He showed the prevalence of the disease in North Cambridge near the clay-pits and near Fresh Pond. In some places so many men were ill as to seriously cripple the working forces. You will observe, however, that he has nothing to say of cases near the river. Moreover, inquiry of other physicians assured me that very few of Cambridge's cases had occurred there. My personal inquiry for the most part verified their statements. Foul odors and other unsanitary conditions, even *in extremis*, had existed in places along the banks but intermittent fever was relatively rare. About the only cases I found were in a settlement just to the west of the Cambridge Hospital. Here, in a little valley formed by the sloping banks of a small water-course, were several. At this place, besides the attendant dampness, the most unsanitary conditions existed, for example, one of the houses, a double one, had an un-walled privy in an old shed, just behind the rear and on the shady side of the house; on this side also were the kitchens; and on the easterly side was an old cess-pool. In this house both families were sufferers, and intermittent fever had also attacked the persons who had lived there the year before. The other cases had occurred further along the settlement. The only other case I heard of in this neighborhood was in the household of the landlord of these houses. This case may have arisen from the Fresh Pond centre, and skipped over the intermediate households; but certainly its origin is far better explained as in some way due to the infection among the tenants.

It would thus appear, first, that all the cases of intermittent fever on the immediate banks of the Charles River are localized about special foci. This shows most clearly when they are plotted as on this map, and, according to the law expressed above, excludes any cause that is general in its action, as would be the river *per se*, or any of its especially unsanitary conditions; and, secondly, that in each centre there was present some local condition of especial dampness, as by recent disturbance of the soil, as a possible associate of a causative factor.

Let us next consider what light is shed upon the subject of the origin of these cases by studying the data furnished by others.

Intermittent fever is a very widespread disease. It occurs in one form or another in various tropical countries. It ascends through the temperate regions of both hemispheres, reaching into Canada in our hemisphere, and into the countries bordering on the North Sea in the eastern. One of the best accounts on this part of the subject is that of Boudin in "*Géographie et Statistique Médicale*," published in Paris in two volumes in 1857. Though notably a disease of swampy lands, as around the Isthmus of Panama, and the Pontine Marshes about Rome, yet mountainous regions are not exempt. But wherever found, the cases are localized about special foci. Another fact stands out prominently in all accounts, namely, that some condition of dampness is invariably mentioned. Either an old mill-pond has been dried up, or a river has overflowed its banks and subsequently exposed an expanse of damp soil, or a mass of forest vegetation has recently been dug up, or a sewer or other excavation has been made. No matter what the views of the author may have been, whether he upholds the "ground-water" theory, the "clay subsoil," "atmospheric agencies," or whether he has taken pains to tabulate the temperature, rains, winds, etc., one is almost sure of finding mention of some condition of dampness.

Other facts in the distribution of intermittent fever are closely correlated with the above. One of these is that certain localities, even if surrounded by water, if their soil is well drained, that is, is not marshy, are notably free from the disease; for example, in many oceanic islands it is practically unknown. A similar fact is that sailors and marines have a much smaller percentage of cases than is found among troops stationed on shore. Data of this sort show that dampness, *per se*, is not the cause of intermittent fever, but is only an associate of the cause; in other words, it appears to be only such dampness as occurs on land in association with organic matter, whether the dampness itself is due to rainfall, or to pond or river overflow. Moreover, portions of countries if particularly dry, as the Cape of Good Hope, or if with abundant river drainage but without much marshy land, are notably exempt from malarial diseases. Still another fact showing the close relation of the disease with dampness is, that where it has prevailed and the soil later has been well drained the disease has disappeared. This has been abundantly shown in the experience of Brooklyn, N. Y., in Washington, and in places in other countries, as in the various parts of England.

In this connection I would call your attention to the fact that in a new country, as in our West, intermittent fever is very common; indeed, in Wisconsin, as I am informed by a physician whom I intend to quote at length presently, this has so forced itself upon

the notice of settlers that they are unwilling to occupy dwellings constructed over cellars recently excavated through the *débris* of vegetable growth, whether such growth is in swampy land or on a mountain side. Their experience has taught them that to do so would most likely result in malarial illness in their household. They wait till all is dry before occupying their houses.

In the long respite from malarial diseases which is now being broken in upon hereabouts, I fear we are losing sight of certain facts which have a most important bearing on the subject. We forget that when our ancestors settled here they found conditions practically the same as we are now finding in the West, and that they found intermittent fever here. This is clearly shown in the Boylston Prize Essay of our venerable and honored poet-teacher, Dr. Oliver Wendell Holmes, written in 1838, nearly sixty years ago, but standing to-day as one of the best expositions of the etiology of intermittent fever for practical purposes extant.

We forget that all through our State, as shown in the admirable reports of the Drs. Adams of Pittsfield and Framingham, Dr. Cook of Natick, Dr. Chase of Brookline, and others, that malarial diseases have been found in several places much longer ago than for the past six or eight years. Indeed, a comparison of the various papers shows that at no portion of the century has there been a time when some towns in New England have not furnished cases, which if the disease had an etiology anything like that of small-pox or scarlet fever, or to that of the supposed mysterious stranger, a "*materies morbi*" which is said to be "creeping up our river courses" in some extraordinary way to-day, all of us would probably have been stricken with the disease by this time.

We forget that the present renaissance of New England activity, with its construction of metropolitan sewers, its building of many suburban homes for merchants of our large cities, and the many problems incident to gas-pipe, drain-pipe and electric-railway construction has practically arisen hereabouts within the past six or eight years, and that previous to that time Boston and Salem and Plymouth and Cambridge, as regards building operations and the like, were practically in the condition that certain of our suburbs, as Chelsea and Charlestown, are in to-day. Indeed to-day intermittent fever is heard of chiefly in their newer parts or those recently disturbed in connection with local improvements, as digging up streets and the like.

The next point in our search for a causative agent must be studied with the patients themselves. Not to prolong this paper unduly, let me at once call your attention to the researches of Drs. Osler and Thayer of Johns Hopkins, and of Professor Councilman formerly there also, but now with us; let me refer to Professor Binz of Bonn, and to Dr. Dock of Texas, and to the repeated confirmatory observations of the microscopists of our home hospitals in the last year or two. They have demonstrated beyond a shadow of doubt that in the blood of an intermittent fever patient is a micro-organism which attacks the red corpuscles and is a causative factor of the disease. This is known as a hæmatozoon. At one stage of its life-history it closely resembles an amoeba, and passes through a variety of stages (crescentic, granular, etc.), and then appears outside the corpuscle as a flagellated form. This is not a bacterium. Its affinities are with the monads, the lowest of organisms in the ascending scale of animal life. The action of cinchona alkaloids in destroy-

ing its life is known, but how it gets into the body and where it lives when outside, are still matters of conjecture. Certain formidable, if not insurmountable, difficulties are in the way of settling these points. One of them is that as far as known no animal can be successfully inoculated with the disease from human blood. The other difficulty is equally formidable. When one learns that there are many micro-organisms in the ground, one is apt to conclude that it would prove an easy matter to solve the problem: I at first so concluded on finding in earth taken from the surroundings of the instructive series of cases I am about to call your attention to, amoeboid forms, granular bodies, flagellate organisms, etc., looking very similar to those found in blood. For a moment I was greatly rejoiced, thinking I could soon solve the difficulty, but on consulting the authorities I learned that all previous inoculation experiments had failed because the soil in all places is apt to be teeming with the bacillus of tetanus, which soon kills the animals experimented upon. At this point of the argument one is forced to say that demonstration wholly fails. I do not see how these points can be fully demonstrated.

When evidence such as has been advanced up to this point in the inquiry fails, it is proper, for the purposes of a "working hypothesis," to rely on what the lawyers call "circumstantial evidence." It would appear that such evidence justifies us in assuming that the hæmatozoon has for its habitat outside the body some form of animal or vegetable life such as is found in swampy land or in decaying vegetation, as on a forest-clad hillside. It is known that such micro-organisms live in organic tissues, both living and dead, and it is not necessary for practical purposes to say just what particular organism the hæmatozoon lives in.

Our complete argument would then stand in this way:

(1) Intermittent fever is a disease always originating locally, thus excluding as etiological factors all causes of a general character.

(2) Intermittent fever is always found to have associated with its origin some conditions of local dampness.

(3) A micro-organism, namely, the hæmatozoon, has been demonstrated as occurring as a causative factor in the blood of patients ill with intermittent fever.

(4) These organisms belong to a group of animals, many of whom are known to live in damp soil, or in animals and plants living in damp soil, thus rendering it extremely probable, especially if we consider our first and second propositions, that the "hæmatozoon" has a similar habitat.

(5) Such micro-organisms may readily be taken into the system in either of the following ways: (a) By drinking water contaminated with moisture from such damp, decaying soil. (b) By entering on food which is contaminated from unclean hands. It seems to me quite probable that, in view of the uncleanly habits of laborers who sit down to their dinner-pails without a thought of washing their soil-stained hands, we may quite sufficiently account for what appeared to be the case in my inquiry, namely, that, relatively speaking, far more cases occurred among hearty laborers than among other classes of people. Professor Sedgwick refers to this method of self-inoculation under the name of "secondary infection," as accounting for a considerable number of cases of typhoid. (c) By cur-

rents of air blowing within limited areas from soil rich in the supposed germs. In view of the widespread opinion that air from malarious marshes is liable to cause the disease, also in view of the cases to which I shall soon call your attention, and of other cases which have come to my notice, this latter seems a probable way also.

You will observe that the first, second, third and a portion of the fourth propositions in the argument may fairly be considered as fully demonstrable and practically already demonstrated; you will also note that the supposition in the fourth, also the fifth proposition, while not to be considered in that category, are in a class of circumstantial evidence of the strongest kind, namely, being wholly in agreement with similar classes of data which have been demonstrated in other lines of argument.

It is an axiom of science that if an hypothesis is sufficiently strong to permit prediction which subsequent data confirms, and that if observations are sufficiently numerous to guard against the probability of individual mistakes, that such an hypothesis explaining a sequence of phenomena, even if incapable of demonstration at every point, ceases to be an hypothesis, but takes the rank of a theory. Indeed, it may become a law; such is the law of gravitation which at first was the Newtonian hypothesis. Such is the theory of evolution, which is an outgrowth with modifications of the Darwinian hypothesis. The view presented in this paper can scarcely yet be called a law, perhaps not even a theory. I would summarize the present state of our knowledge regarding the etiology of intermittent fever as in the stage of strong hypothesis, almost a theory; at all events, quite sufficient for practical purposes, and what naturalists would call a "working hypothesis."

In support of the view that the hæmatozoon lives in a damp soil outside the body, and whether in a swamp or on a mountain side, let me offer the following cases. They nearly complete the chain of evidence.

I did not see any of them personally, but state them as reported to me by the physician in charge of the institution where they occurred. This institution consists of several buildings standing on hilly land, much of which, just prior to their construction, was covered with forest growth. The cellar of one of the buildings was excavated through boggy soil containing much decaying vegetable material, though situated near the top of the hill. Intermittent fever broke out among its inmates soon after it was occupied. Two of the dormitories are situated on the highest hill, and form sides of a quadrangle. The one occupied by the boys was built on land which had been cleared for many years, and was well dried. In this scarcely any cases occurred. The other, the girls' dormitory, was built under exactly similar conditions as to date, plan, etc., except that it was on damp forest-land, a considerable amount of the *débris* of which was disturbed in excavating for the cellar. In this five or six cases occurred daily, until nearly all the girls were ill. The epidemic ceased on digging a trench around the side of the building towards the woods, so that no moisture from them could enter the cellar. These cases may be considered as examples of air-transmission. Another interesting series, illustrating the probable origin from a cause associated with damp soil and decaying vegetable material, occurred in this same institution, in an old stone house situated near the foot of the above-men-

tioned hills. At the very foot, some hundred yards or more from the house, was a swamp. No cases had occurred in this house for many years, nor have occurred within the past year, thus disproving any connection with the swamp. But, just as with the other series, numerous cases occurred in this house when local conditions of a similar character were at hand. In this series, the local conditions were the digging up of soil rich in decaying vegetable matter necessitated in the construction of a roadway and a sewer next to the house.

In judging of the etiology of these cases, it is to be noted that the institution is situated remotely, more than a mile, from the Charles River, and that, although cases were to be found in neighboring towns, yet none were particularly near at hand.

Had such a combination of presumably causative factors, as were found here, existed in the West, such cases would probably not have been allowed to occur. Measures, such as delay in occupancy, and others to ensure dryness of immediate surroundings, would have been taken. In this case the physician in charge feared intermittent fever, but he was overpersuaded, having been informed that, though the disease had been "creeping up our river valleys in the past few years," that it was almost unknown in that immediate neighborhood, and never occurred on hill-tops. He permitted the immediate occupancy of the buildings, and the results proved it to have been a sad mistake. Such cases ought not to occur again in this locality. A due attention to the steps of the hypothesis advanced this evening, though it be not proven at every point, certainly promises us a safeguard. With the present activity in park and metropolitan improvements, and with the growing tendency to building suburban residences, it is well to bear so promising a safeguard in mind. It may prove that the present epidemic may subside at once, as it is already beginning to in several of the places already attacked. Such local subsidence is to be expected in accordance with this hypothesis. It is certainly the wise and prudent course to assume that we have no more immunity from attacks of intermittent fever than is the case with the rest of the world, and that to guard against it we, too, must take the best measures that experience teaches are protective.

TWENTY-SIX CASES OF INTUBATION OF THE LARYNX.

BY FRANK L. DAY, M.D., PROVIDENCE, R. I.

UP to the first of January, 1894, since October 10, 1890, I have seen (each time in consultation with one or more physicians) 31 cases of laryngeal obstruction. These do not include four cases where the child had died previous to my arrival, once each with Drs. Godding, Carpenter, Moore and McKenna, nor one case with Dr. Acres, where operation was refused.

Of the 31 cases seen, in five operation was not advised; of these, three recovered and two died, as follows:

One child, age six, with Dr. Hanaford, of Apponaug, recovered.

Two with Dr. G. E. Carpenter, in East Providence, recovered.

One case seen with Dr. H. P. Abbott was instructive. Male, age five-and-a-half years. A septic case where there had been laryngeal symptoms for twelve

hours. Seen by Dr. Abbott but a few hours before my visit. As the dyspnoea was but moderate, we decided to try steam-inhalation and other medical means for a while. Everything went on well, until twelve hours later the parents took him away from the steam and saw him choke to death without notifying Dr. Abbott, as had been agreed if anything went wrong. The lesson is this: Environment is an important factor in estimating the advisability of operation; and in another case where competent nursing and care was not available, I should operate, even where the dyspnoea was very moderate.

One case seen with Dr. S. A. Welch. A child of two years had been sick but a few hours, a septic case with only moderate obstruction. We decided first to initiate medical means, and saw marked improvement for some hours. The child died of sepsis within twenty-four hours.

In twenty-six cases operation was advised, and these are reported in the table which accompanies this paper.

This series is far too small to be, by itself, of any statistical value, but can only go to help make up, with the reports of others, the great mass of statistics.

Nearly every case served to open up suggestions or to enforce well-recognized points, and some of them I have appended to this report.

Case 1. Here the child's strength had been nearly exhausted by vomiting from repeated doses of ipecac, persisted in the entire night previous to Dr. Munro's first visit, by advice of the former attendant, an uneducated man. It is not the inexperienced only, who even to-day, when called to a case of diphtheritic croup, administer an emetic, as often as otherwise to satisfy the family. There may be cases where a single emetic dose may be useful in helping the expulsion of membrane; but to persist in the use of emetics, or to give them in a routine way, seems to me unjustifiable and inexcusable. I believe the heart-failure in this case is attributable to the weakness induced by emesis.

Case 2. This is the only case where the dyspnoea was not relieved, at least temporarily, by the tube. At first a three-to-four-year tube was inserted, quickly removed, and a five-to-seven-year tube at once introduced. Neither gave relief, and tracheotomy was at once done, partially relieving the breathing for a time. This case serves to emphasize what has been repeatedly said, that the tracheotomy instruments should always be at hand.

Case 4. No urine was voided here for twenty-four hours preceding entrance, nor was any treatment efficient to re-establish renal activity after entering the hospital.

Case 13 also had suppression of urine, coming on two days after the tube had been removed, and when the child was doing well in every way. The family attendant exhausted every means to establish the function of the kidneys without avail.

Case 6 was a very interesting one. The child was desperately ill, and only recovered after a long stay in the hospital. While wearing the tube, it seemed daily, for several days, that he would die, and on one of these days several consultants advised that the tube be removed, lest it be found obstructed. The character of the respiration, which was very rapid, though shallow, and the sound, inclined me to the belief that the tube was clear, and that any extra manipulation would weigh against recovery. The look of a child

struggling for air, usually a slower and labored respiration, is far different.

Case 8. Here the tube became plugged on the tenth day. There was cyanosis and labored breathing. Prompt removal of the tube showed its lumen to be nearly occluded by membrane, and was followed by relief. It was not required afterwards.

In Case 16, could I have foreseen the great dysphagia which was to follow intubation, I should have done tracheotomy at the start. It was the only one where there was so great difficulty in swallowing as to cause me to remove the tube for the purpose of feeding—this after it had been in but eight-and-a-half hours. For two days he did well without it, having only moderate dyspnoea; then I was summoned in the middle of the night, and found him struggling desperately for breath. I had no assistance at the time, and the surroundings for immediate tracheotomy were unfavorable, so the intubation tube was reinserted without any assistance, medical or lay. I decided to leave the thread attached for a few minutes, to facilitate removal if necessary. In a fit of coughing the patient pulled it out, and with it came much membrane. This case well illustrates the danger of leaving the thread attached. Fortunately, the tube had so reamed out the trachea that the obstruction was removed. Had anything been required later, I was prepared to do tracheotomy, owing to the O'Dwyer tube interfering with the taking of nourishment.

Cases 17 and 21 were moribund at the time of operation. They were cases where tracheotomy would never have been considered. It seemed doubtful if the latter would survive intubation even. The whole operation did not require fifteen seconds. The child rallied well, and lived a day and a half. These two cases seem to me to justify the claim of intubation to a definite place in surgery not occupied by tracheotomy.

In Case 18 the tube was coughed up, and did not require to be replaced for twenty-four hours. This child finally died from sepsis. In Case 20 the tube was likewise coughed up after sixty-six hours, but was not needed afterwards. The child recovered.

Case 19 was an unusual one. The whole family had been having influenza, and three weeks previous to operation she had an attack. Her symptoms were anorexia, weakness, insomnia, much gastric irritability and fever, with a general eruption of petechiæ, maculæ, papulæ and blotches. The eruption disappeared, but she did not regain strength. I saw her first November 11, 1892. She had been croupy the day before, but in the evening there was less dyspnoea. Same thing repeated next day. My visit was in the evening, and, as she was breathing pretty well, Dr. Munro and I agreed that it was best not to operate. The following day there was more dyspnoea, increasing towards night, when there was marked cyanosis and retraction. No membrane nor glands. Vomiting constantly. Pulse 145, intermittent. Intubation gave entire relief to dyspnoea, and she soon fell asleep, having had little or no sleep for two or three days. Nourishment taken pretty well. She did well for six hours. We gave a hopeful prognosis. The following morning Dr. Munro was called, and found she had just died, having for the five hours previous grown progressively weaker, and having breathed more and more rapidly, the parents stated. No necropsy was obtained; but it seems probable

that death was from pulmonary oedema, following a catarrhal laryngitis attending influenza.

This series of cases has been especially interesting to me, in carefully watching the way in which the children took nourishment. It cannot be too frequently repeated, that once the tube is in place (whether by tracheotomy or intubation) and obstruction overcome, a case of laryngeal diphtheria resolves itself into the systemic disease diphtheria in the vast majority of cases, and now nourishment is the key to the situation, and the nurse holds that key. Everything else, even stimulation, is subsidiary only. I have been surprised to find in how large a proportion of cases the patient, if in a favorable posture (usually lying on the back or side, with feet elevated a little) can swallow with very little difficulty if fed rather slowly. Here everything depends on the tact and patience of the nurse.

In 25 cases of intubation noted, there was

No dysphagia in	10
But little dysphagia in	13
Much at first, none later in	1
Impossible to swallow in	1

So, in 23 out of 25 cases, these children could take nourishment without great difficulty from the first. This leads me to believe that the difficulty in feeding has been overestimated by most writers. However, much care and patience is often requisite on the part of the attendant.

The tube, then, merely overcomes one of the incidental symptoms, if you please. The disease itself must be fought with food and stimulants, the latter in very large quantity often. The only drugs necessary, from our present knowledge, seem to be mercury and iron. Peroxide of hydrogen is useful locally in the throat.

While in most of the cases the introduction of the tube has been easy, there have been enough trying ones to enforce what is well known, that in young children and in densely infiltrated throats it may be attended with much difficulty.

Case 9 was especially difficult; the fauces were greatly swollen, particularly on the left side, making the glottis seem to be far out of the median line. Here the tube was coughed up after two or three hours, and was found plugged with a single piece of membrane, which showed the bifurcation of the trachea.

Almost without exception, after operation the child coughed a few minutes, then fell into a quiet sleep. The relief of dyspnoea was complete in 22 cases, nearly complete in 2 cases, incomplete in 1 case, and none in 1 case.

By consulting the table, the size of the tube used will be seen in many cases to have been larger than that indicated by the O'Dwyer gauge for a child of that age. The development of the child is more important than the age. I always use as large a tube as can be placed with ease, and leave it in as short a time as is consistent with unobstructed breathing.

As far as I know, there has been no permanent impairment of speech. The average time of wearing the tube in the eight cases which recovered was about five and a half days. The percentage of recoveries was 30.8, but this is of little import. To illustrate the fallacy of statistics in a limited number of cases, the first 20 cases show 40 per cent. of recoveries. Again, the last 6 all died. These were all in the country (in East Providence and Rehoboth), and in a locality

where the type of cases I have seen has been especially septic and malignant, these being a small part of all the cases of diphtheria I have been asked to see (the others not laryngeal) there during the past few months.

The cause of death has been

Sepsis in	7 cases
Extension to bronchi in	5 cases
Uremia in	2 cases
Sepsis and extension in	1 case
Sudden heart failure in	1 case
Oedema of lungs in	1 case
Extension and exhaustion in	1 case

Especially true is it that the type of the disease prevailing at the time determines the death-rate after either intubation or tracheotomy. This is apparent especially from the greatly varying percentages reported by operators in Europe, where intubation has been steadily growing in favor during the past three years.

By no means do I believe that tracheotomy is to be driven into disuse by intubation, in relieving the obstructive symptoms of diphtheria. It is a severer way of accomplishing what, in a large proportion of cases, intubation does; but I would never intubate without having the tracheotomy instruments ready for an emergency, as their use may be imperative in any case.

Intubation involves less shock, requires no anæsthetic, requires no cutting, and is therefore often consented to by parents who would not allow tracheotomy. In very young children it holds out some hope, where tracheotomy is almost always fatal. Being a less severe measure, it may be resorted to earlier, as well as later, than tracheotomy would be justifiable. There is no wound to heal after the tube is removed.

FOUR UNUSUAL CASES: I

- I. IMPERFORATE HYMEN WITH HÆMATOCOLPOS.
- II. MUCOUS CYSTS OF THE VAGINA.
- III. RECTO-VULVAR FISTULA.
- IV. SALIVATION OF PREGNANCY.

BY CHARLES M. GREEN, M.D., BOSTON.

I.

THROUGH the kindness of Dr. C. W. Swan I saw this case April 20, 1893. The patient was fourteen years and five months of age, was well developed, well nourished, and in excellent general health: she attended school regularly, took long walks, was fond of dancing and of the out-door sports of healthy young girls. Neither she nor her watchful mother had seen any symptom of the menstrual molimina; but for three months there had been a noticeable enlargement of the abdomen. For a week there had been a frequent desire to pass the urine; but there had been no disturbance of defecation, no bearing down, no pelvic distress, in fact no discomfort whatever. Advice was sought, however, on account of the gradually increasing tumor in the lower abdomen and the non-appearance of the menstrual flow. Dr. Swan found an abdominal tumor, reaching nearly to the umbilicus, but narrow, and not extending into the iliac regions: the hymen he found to be imperforate.

When I saw the case, I was unable to determine positively whether we had to deal with a distended

¹ Read before the Boston Society for Medical Observation, February 5, 1894.

vagina simply, or whether the uterus and possibly the Fallopian tubes were involved; but the absence of distressing symptoms and the probability that the girl had passed but a few months beyond the age of puberty led me to believe that probably the retained menstrual blood was limited to the vagina. The hymen was found to be bulging convexly outward: this I punctured with a small trocar, and a dark-brown fluid escaped. The discharge was not of tarry consistency, as usually described in the books, owing, I presume, to the fact that it had not been retained sufficiently long for the blood serum to be absorbed to any great extent. After the abdominal tumor had somewhat subsided, I enlarged the opening in the hymen by multiple incisions and thus thoroughly evacuated the vagina. After washing out the vagina with a weak carbolic solution I explored with an aseptic finger: the uterus was found of normal size and the os non-patulous; the tubes could not be felt: it was clear, therefore, that the case was one of hæmatocolpos simply. The vagina was enormously distended and seemed to fill the whole pelvis.

The evacuated fluid was carefully collected and was found to measure three and one-half pints. Assuming that there had been no marked absorption of the serous constituent, and accepting the common statement that the normal average amount of each menstrual flow is about six ounces, we may infer that the fluid evacuated represented approximately nine monthly periods, and that the girl began her menstrual life at the age of thirteen years and eight months.

After operation the patient was kept in bed for five days and the vagina was carefully syringed with carbolic water. There was no febrile reaction and no evidence of sepsis. Twenty days after operation a normal, painless, and free menstruation took place, lasting six days. Three days thereafter I found that the vagina had contracted a good deal, but was still quite capacious: the vaginal walls were now more or less thrown into folds, and gave off a thin, glairy secretion: the uterus was normal in size and position.

These cases of congenital hymeneal atresia are rare. Carl Braun observed only four cases in his extensive experience, and Lombe Atthill, Master of the Dublin Rotunda, only one. Among careful, intelligent people the anomaly should be recognized early; and when thus recognized, and aseptically treated, the results should be good. In neglected cases, however, the uterus and Fallopian tubes may become distended, blood may thus escape into the peritoneum, and fatal results ensue. In these cases, too, of hæmatometra and hæmatosalpinx, there is danger of rupture of the tube either by over-distention or by the force of a rapidly contracting uterus after the hymen is incised. To avoid this latter danger it is prudent to make at first only a small opening in the hymen, thus allowing the fluid to escape very slowly, and also to avoid all pressure over the uterus, either by the hand or by the abdominal bandage which has sometimes been advised. The greatest danger in all cases of menstrual retention from hymeneal atresia, and the one most fatal in former days, can now most happily be averted by rigid surgical asepsis.

It is probable that in earlier times these cases of menstrual retention were sometimes overlooked and the patient treated with iron and the various emmenagogues until distressing symptoms demanded a physical examination. Sometimes the hymen has ruptured

spontaneously, and a natural cure thus resulted. Mitchell² has recently reported the case of a girl of sixteen who had never menstruated, and who had had monthly attacks of spasmodic pains in the lower part of the abdomen, irritation of the bladder, and a constant feeling of bearing down, associated with abdominal enlargement. During an attempt at vaginal examination the hymen was ruptured, a large amount of retained menstrual flow gushed out, and recovery followed.

II.

Mrs. H., aged thirty-five, who had borne one child several years before, was referred to me in the autumn of 1893, by Dr. J. H. Woods, of Brookline. She had been for some time in poor general health, and there was well-marked nervous debility: the pelvic symptoms were backache and a constant feeling of bearing down. Vaginal examination revealed a second degree of retroversion with old adhesions, a slight laceration of the cervix requiring no treatment, and two cysts of the vaginal wall. The cysts were seated, the one on the anterior wall just in front of the cervix, the other on the right posterior wall at its upper third: the size of the two cysts was about equal, that of a large horse chestnut or small hen's egg. These cysts had probably been growing for several years; but it was only in the past year or so that the patient had been conscious of some obstruction in the vagina.

It was obvious that what was most needed in this case was general treatment directed to the neurasthenic condition; and incidentally it was thought best to free the uterus, if possible, and restore it to its normal position. The cysts probably added little to the patient's discomfort, except in so far as possibly to increase the sense of weight in the pelvis and to interfere somewhat with physiological functions. It was evident, however, that their presence would interfere with measures to raise the uterus and the subsequent wearing of a pessary; and it was reasonably probable that before long they would reach such a size as to occlude the lumen of the vagina. It was therefore thought best to remove them. Under ether anæsthesia the cyst walls were freely laid open, there appearing to be no sac which could be dissected out. The contents of the cyst on the right posterior wall were of a thinish, mucoid character, of a light chocolate color, and without odor: those of the cyst on the anterior wall, thick, viscid, and almost semi-solid, of albuminous color, and likewise without odor. This latter material was submitted to the examination of Dr. W. T. Councilman, who reported as follows: "Contents of cyst consist of a glairy mucus, enclosing great quantities of so-called Drysdale's corpuscles and large leucocytes filled with fat granules. It is very probable that the cyst had an epithelial lining, and that these Drysdale's corpuscles are the nuclei of cells which have been destroyed."

The cyst cavities were gently curetted, cleansed with Dobell's solution and weak corrosive, and lightly packed with iodoform gauze. After ten days the cavities had markedly shrunk, there was very little mucous discharge and the openings were still patent: the patient was then sent home for general treatment preparatory to dealing with the adherent retroversion.

Mucous cysts of the vaginal wall are fully treated in the text-books, and I am able to contribute nothing

² British Medical Journal, December 16, 1893.

new to the knowledge of the subject. They must be regarded as somewhat rare, although some observers, notably Lee, of New York, consider them fairly common: in an experience of sixteen years I have met with but this one case. They occur, as a rule, singly, more rarely two or three at one time. The anterior wall of the vagina is the most frequent seat, the lateral wall the least common. In sixty-six per cent. of the cases the cyst is situated between the middle of the vagina and the vaginal introitus, and when thus seated may simulate rectocele or cystocele: in my case both cysts were at the upper third of the vagina. The cysts may vary in size from that of a pea to that of the fist: isolated cases are also reported of still larger cysts; but they are usually discovered by the time they reach the size of a hen's egg. They may be superficially or deeply seated: in my case both cysts were superficial. The contents of the cysts may be thin, resembling that of hydrocele fluid, and of reddish, brownish, greenish or chocolate color; or they may be thick, viscid and albuminous.

Opinion is still divided as to the existence of glands in the vaginal wall; but the weight of authority seems to be that in all probability there are no true glands, but what are called vaginal crypts. Vaginal cysts are probably not, therefore, retention cysts properly so called, like wens or cysts of Bartholin's glands, but are developed in the vaginal crypts, which are lined with flattened epithelium, and which have in some way become occluded, either by inflammatory processes or by epithelial plugs. This subject is fully discussed in an able paper by Rutherford, which is the latest contribution I have seen.

Vaginal cysts, as a rule, grow very slowly, and when small cause no symptoms: small cysts are therefore discovered only by accident. Large cysts may cause uterine displacements, may interfere with the bladder or rectum and cause various pressure symptoms, may make coitus difficult or impossible, and, when seated low, may protrude from the vagina and cause discomfort: they may also constitute an obstruction in labor.

The best treatment of vaginal cysts of any size is undoubtedly enucleation; but this is often difficult or impossible when the cyst wall is thin or the cyst is deeply seated. In such cases free incision and evacuation is the most reliable measure, followed by curetting and packing with iodoform gauze: it is well also to excise a small portion of the cyst wall to prevent closure of the incision, after the patient has passed from observation.

These tumors should be recognized without difficulty; but Winckel points out that they may be mistaken for cystocele, rectocele or small ovarian cysts. Careful examination, however, will usually remove all doubt, and doubtful cases should be aspirated before incision. In large cysts there is well-marked fluctuation.

III.

A. C., aged thirty-two, single, a bookkeeper by occupation, consulted me in November, 1891, and gave the following history: The general health had always been fairly good, and the menstrual function normal; she had suffered more or less with hæmorrhoids, and twelve months previously had been operated on for the cure of a fistula in ano. Since the operation she

had suffered with soreness about the vulva, and also with incontinence of intestinal gases and semi-liquid discharges. It was from this last annoyance that she especially sought relief.

Physical examination disclosed a short fistulous tract extending from the lower border of the sphincter ani to an opening about two inches to the left of the anus: further, the sphincter was entirely laid open at its upper left border, and a gaping sulcus extended from this point upward toward the left, along the inner border of the left labium majus to a point opposite the lower third of the left labium minus. There was a small button-hole opening through the left nymphæ: the hymen was intact. The symptoms and lesions presented were essentially those of a complete rupture of the perineum, although the vagina was in no way involved. It was obvious that there had existed a fistula in ano extending from within the sphincter upward and to the left between the labia, that this fistula had been laid open, and that the sulcus had subsequently failed to unite, although the surfaces had cicatrized.

Through the kindness of Dr. E. J. Forster, who was then on duty, the patient was admitted to the Boston City Hospital, and I operated to close the sphincter and restore the integrity of the parts. The necessary denudation was made, the rectum was closed in with catgut sutures, and the sulcus above with silver wire. The superficial fistula in ano was successfully treated with the elastic ligature. The wire sutures were removed on the tenth day, good union had taken place, the deformity of the parts was removed; and on discharge, two weeks later, the patient had entire control of the sphincter ani as regards both liquid feces and intestinal flatus.

This case is unique in my experience, and I have never seen a similar one reported. Should a case of recto-vulvar fistula ever present itself to me before the sinus had been laid open I should adopt the method of treatment proposed by Dr. E. W. Jenks, of Detroit, in 1883,* for the cure of fistula in ano. In view of the fact that in so many cases treated by incision alone the sphincter ani fails to unite, and the deplorable condition of incontinence of feces and flatus thereby ensues, Jenks recommended the following method of procedure: The sinus is laid open, care being taken to incise at right angles to the sphincteric muscular fibres; the so-called pyogenic membrane and all adjacent abnormal tissues are dissected away; and the sulcus is then closed with buried sutures passed entirely around the fistulous tract, the sphincter to be closed as in cases of complete rupture of the perineum. Dr. Jenks does not claim that this method is applicable to all cases of fistula in ano; but it would seem to be especially applicable to cases like the one above reported.

IV.

Mrs. A. D., aged twenty-seven, first came under my observation just prior to her first labor in 1891. She was a fine specimen of womanhood, well developed, accustomed to long walks, and, with the single exception to be presently mentioned, in robust general health. Early in her pregnancy, in place of the morning nausea and vomiting so commonly observed at this time, she began to be troubled with salivation. This symptom gradually increased in severity, interfering

* Transactions of the Obstetrical Society of London, 1892, page 364.

* Transactions of the American Gynecological Society, Vol. 8.

with her comfort by day, but especially disturbing her at night. In fact, the flow of saliva finally became so profuse at night that the patient dared not lie down for fear of choking, but sat bolstered up in bed with a towel placed to receive the saliva. She was thus able to sleep but little, although towards morning the flow diminished somewhat, and she was enabled to sleep for two or three hours. In spite of the loss of sleep, however, the general health continued good, and the appetite was unaffected. The submaxillary glands were markedly enlarged and the contour of the face thereby distorted; the eyes, too, were somewhat heavy from loss of sleep, but otherwise the patient looked as well as usual.

During all this time the lady had been under the care of a well-known and able physician, who had tried all the drugs recommended for excessive salivation without appreciable effect. The patient said she had received more than a dozen prescriptions. It did not therefore seem worth while for me to attempt any further treatment. I found that the urine was markedly diminished in amount, without other abnormality, however. This diminution was undoubtedly due to the great derivation of water through the salivary glands, and I advised the free use of Apollinaris or lithia water, which increased the amount of urine somewhat. The labor was in no way remarkable: the os uteri was fully dilatable after twenty hours of first stage labor; but the head did not descend, and after two hours of fruitless maternal effort I delivered a ten-pound girl with high forceps and axis-traction rods. During the next three days salivation occurred two or three times, the flow lasting only a few minutes; it did not appear after the third day, when lactation was fully established; from this time the convalescence progressed normally, and mother and child were discharged well.

Early in 1893 this patient became pregnant again, and at the end of the second month salivation began again as in the first pregnancy: there was no morning sickness. By the fifth month the flow of saliva had become so excessive as to cause great discomfort and loss of sleep; but, as before, the general health continued good. In view of her former experience, the patient was indisposed to submit to drug treatment, especially as I could offer no assurance that any treatment would prove effectual. As before, lithia water was found to be the most refreshing drink for the swollen gums and oral mucous membrane. Labor began just 280 days from the first coitus after the last menstrual period, and with the invasion of labor pains salivation ceased. The labor was uneventful, except that as before it was necessary to deliver with high forceps, the child, a boy, weighing ten pounds. On the second day there was some return of salivation, and with the establishment of lactation the salivary flow did not cease, as in the former pregnancy; on the contrary, it continued for two weeks more or less profuse, never absent for an entire day, and sometimes sufficient in amount to cause vomiting when the patient was recumbent. After two weeks the flow gradually diminished in amount; but it did not cease altogether until the end of three months. Aside from this discomfort the convalescence was normal, and mother and child were discharged well.

I have met with but one other case² of excessive

salivation in pregnancy, and that was seventeen years ago when I was a medical student. My experience is therefore that of others, that excessive ptyalism of pregnancy is a very rare affection. Winckel, in his text-book of midwifery, says that salivation is mostly associated with extreme nausea and vomiting; but these latter symptoms were absent both in Dr. Richardson's case and in my own. The disorder is probably a reflex neurosis, like many of the cases of uncontrollable nausea and vomiting. The amount of the salivary flow in twenty-four hours may reach several quarts and seriously impair the general health. In some cases of ptyalism, as in some of nausea and vomiting, the disorder may cease spontaneously in the fourth or fifth month; in others, as we have seen, it may continue throughout pregnancy, and cease soon after the birth of the child or on the establishment of lactation. Charpentier³ mentions seven cases in which ptyalism began with the pregnancy (as in Richardson's case), and persisted after delivery, once fifteen days, once eighteen days, twice for two to three weeks, and three times in the same woman for from three to four months.

In regard to the treatment of this affection, while many drugs are recommended by various writers, reliance can be placed upon none. Galatin truly says that pregnancy salivation "is apt to resist remedies." Astringent mouth washes of tannin or quassia may palliate, but cannot be expected to cure. Charpentier recommends the frequent use of brandy as a gargle, and the keeping in the mouth of small pieces of dry, bitter, orange peel. Other recommended remedies are pilocarpin (perhaps on the *similia similibus* theory), iodide of potash, fluid extract of viburnum prunifolium, belladonna, and atropia, the latter being best used by hypodermic injection near the affected glands. But if the affection is a reflex neurosis, it would seem that nerve sedatives would hold out most promise of successful results. Schramm is said to have cured a case in 1886 with bromide of potash, after the iodide and pilocarpin had both failed; but if I remember rightly Richardson used the bromides in his case, to which I have alluded, without apparent effect. If I were to meet with another case, however, I think I should place most reliance on bromides and on large doses of chloral hydrate, the latter exhibited preferably by rectum.

REMARKS ON SURGICAL SPLINTING.¹

BY EDWARD A. TRACY, M.D., BOSTON, MASS.

THAT illustrious surgeon, Frank Hastings Hamilton, whom I delight in quoting — for his work on "Fractures and Dislocations," the first of its kind in the English language, does honor to American surgery — he, speaking of the ordinary manufactured wooden splints, said: "I wish at once, and for all, to disclaim any intention of giving even a qualified approval of any of those carved, polished, and generally patented wooden

¹ Read before the Malden Medical Society, January 29, 1894.

Richardson, at that time instructor in clinical obstetrics, was summoned to my assistance and delivered with forceps a face presentation, M. D. P. He recognized the patient as one whom he had been treating for salivation in the out-patient department of the Massachusetts General Hospital, and who was also affected with excessive ptyalism in her former pregnancy. In this case salivation ceased within half an hour after delivery. Dr. Richardson's report of this interesting case may be found in the Boston Medical and Surgical Journal for July 12, 1877.

² Cyclopædia of Obstetrics and Gynecology, vol. II, page 67.

³ This case was assigned to my charge in 1877 by the Obstetrical Department of the Harvard Medical School. Prof. William L.

splints, which are manufactured and sold by clever mechanics, and which one may see suspended in almost every doctor's office, whether in the city or in the country. Constructed with grooves and ridges, and variously inclined planes, for the avowed purpose of meeting a multitude of indications, such as to protect a condyle, to press between parallel bones, to follow the subsidence of a muscular swelling, etc., they never meet exactly a single one of these, whilst they seldom fail to defeat some other indication of equal importance. . . . If carved wooden splints are employed, they ought to be made especially for the case under treatment."

These strictures apply, it seems to me, with somewhat lessened force to the metal splints we frequently see nowadays. Hamilton further states his preference for strips of wood cut to the proper length and width by the surgeon, and so padded as to fit the inequalities of the limb treated. This surgeon was an adept in the use of gutta-percha for splinting; and the point to note is that whatever he used, he made his own splints. Most surgeons, I believe, think as Hamilton did in this matter; and Dr. Henry O. Marcy's dictum, "The surgeon must make a splint to fit the limb—and not the limb to the splint," aptly defines the proper practice in surgical splinting.

The subject of surgical splinting is a vast one, whether looked at from an historical or a practical point of view. Had I the time and qualifications needed, and you the patience, it might be clearly shown you that surgical splinting, like navigation and printing, had attained perfection undreamed of, in the happy era preceding that of the Chinese philosopher Confucius. But doubtless you will be better pleased if, fancy being restrained, the practical aspect of the subject be dwelt upon. Indeed, I shall use further restraint, and confine myself to remarks on surgical splinting as exemplified in the use of my wood-pulp material, and that, I hope in a manner interesting and profitable to you all.

First, the material and method used shall be described, and later a variety of splints made in accordance with this method shall be shown you; finally, if time permit, I shall demonstrate the method by making a splint before you.

In describing the material, time is saved by quoting from a paper (to be published later) contributed by me to the recent Pan-American Medical Congress.

THE MATERIAL.—The basis of the material is wood-pulp made preferably from the crushed fibre of the poplar tree, and rolled in sheets in such fashion that the broken fibres intertwine in every direction and loosely, so that an increase of plasticity is thus given to the product. These sheets are further strengthened by having a fabric introduced between the layers of the pulp, or by interweaving with the short, crushed wood-fibre, a long jute or other tough fibre.

The sheets are rolled of different thicknesses, for adaptability to all splint conditions. For convenience I shall designate the thickness by number, each unit representing a thickness of one millimetre: thus sheet No. 1 represents the material with a thickness of one millimetre,—sheet No. 2, with a thickness of two millimetres, and so on.

Characteristics of the Material.—The chief characteristics of this material are stiffness or rigidity when dry, and plasticity when moist. Its rigidity can be increased *ad libitum* by the use of a silicate solution as a moistener. Its plasticity has a limit. The limit is rarely experienced, and only when moulding the material over certain complex curved surfaces. To exemplify: a splint cannot be directly

moulded over the ankle-joint anteriorly, for there are two large curves in opposite directions to be followed simultaneously—the convex curve from malleolus to malleolus, and the concave from above downwards over the leg and instep. This difficulty, when met, can be obviated in various ways. I shall mention three of them. Take the case of the ankle-joint: an anterior splint is required for it. The proper-shaped blank shall be cut from sheet No. 1, and moistened with one of the solutions described later. It then should be applied to the limb, care being taken to keep its outer border in contact with the skin, while the superfluous material over the anterior of the joint should be pinched between the thumb and forefinger, and all of it laid or pressed over to one side; a bandage should be singly applied to perfect the moulding of the splint. This method of "pinching and folding over" has an important application in the making of spinal jackets. A second method consists in cutting away the superfluous material, in this case an elliptical figure, and bringing the edges of the cut portion together, to retain them so by means of a strip of the material fastened over the cut edges. A third way is to cut a blank for each important curve and after moulding to properly unite them.

The material possesses, besides the above characteristics that *desideratum* of a splint material—extreme lightness. Its cheapness also deserves a passing mention.

MOISTENERS.—Water or a stiffening solution can be used to moisten the material.

Water.—The advantage of water is its omnipresence. A serviceable splint can be made with its aid. Such a splint should be protected from perspiration or other moisture, lest it be softened and its usefulness destroyed. It can be so protected by a covering of oiled paper or silk, mackintosh, or best by a coat of varnish.

Silicate Solution.—A stiffening solution having several qualities to recommend its use is that of silicate of potash (silicate of soda is almost as serviceable). Any desired degree of rigidity can be imparted to a splint by using this solution, the amount of rigidity depending on the strength of the solution. A splint rendered rigid in this manner, is not affected by perspiration, nor indeed by momentary contact with fluids, as in washing. Another advantage, especially in cases of compound fracture, is that this solution renders the splint antiseptic. In practice, the solution of silicate of potash generally sold for surgeon's use, and further diluted with water, can be employed. (The commercial solution spoken of in this paper is regarded as a 100-per-cent. solution, and the percentage solutions spoken of in this paper are to be made by diluting the commercial solution with the proportion of water called for by the percentage: thus a 70-per-cent. solution is made by mixing 70 parts of the commercial solution of silicate of potash with 30 parts of water. The commercial solution should have a specific gravity of 1.3 to 1.4.)

Dextrin Solution.—Another useful stiffening solution is that of dextrin, in the proportion of about eight ounces to a pint of water. This solution adds some tenacity besides stiffness to the material treated with it. A splint made with its aid can be remoistened with water and remoulded, quite an advantage in cases where from subsidence of swelling or other cause, a closer approximation of splint to the limb is desired. In practice, dextrin (to be had of paint wholesalers) can be carried about in powdered form, and a solution in water extemporized when needed. An addition of eight grains of corrosive sublimate to a pint of the dextrin solution will render it antiseptic.

MOISTENING PROCESS.—A few words descriptive of the proper manner of moistening the material. The aim should be to get barely sufficient moisture into the material to render it semi-plastic. If more moisture be absorbed, it becomes more difficult to maintain the moulded splint in the desired shape while drying, and also unnecessarily lengthens the time required to dry the splint. I find the best way of moistening the splint blank, is to apply the fluid used, on each side of it, alternately, by means of a flat paste-brush. A little practice will enable us to judge the precise amount of moistening best suited for our purpose.

DRYING.—The time required for drying the moulded blank varies, for the different sheets employed, from ten to forty minutes; the thicker sheets, holding the more moisture, require the longer exposure to heat to drive it out. Any source of sufficient heat can be employed; a good kitchen fire is very efficient and, generally, convenient. While the splint is drying it is serviceable to have yarn or string wound around the moistened form after its removal from the body, to aid it to maintain the desired form, until drying permanently fixes it.



FIG. I. A Claviculo-Scapular Splint.

Having thus described the material and method used, instead of quoting further the dry technique for the various head, trunk, upper and lower limb splints, I shall show you some made in accordance with that technique, "the observation of one of which is better than a large demonstration of words," to quote old Isaac Walton.

The most of the splints here shown were exhibited at the Columbian Exposition; your Society, and I am grateful for the honor, has been the first to give me an opportunity to display and explain them to brother practitioners. [Splints for various parts of the body, all of them moulded on the living subject, were shown and discussed; the following three are selected for illustration here.]

A CLAVICULO-SCAPULAR SPLINT.

This splint is part of an apparatus devised for the treatment of dislocation (upwards) of the acromial end of the clavicle. The apparatus is fully described in the *Boston Medical and Surgical Journal*, Vol.

CXXXVIII, p. 186. An apparatus for fracture of the clavicle has been devised on the same principle, that is, to regard the shoulder as a pyramidal body, and to

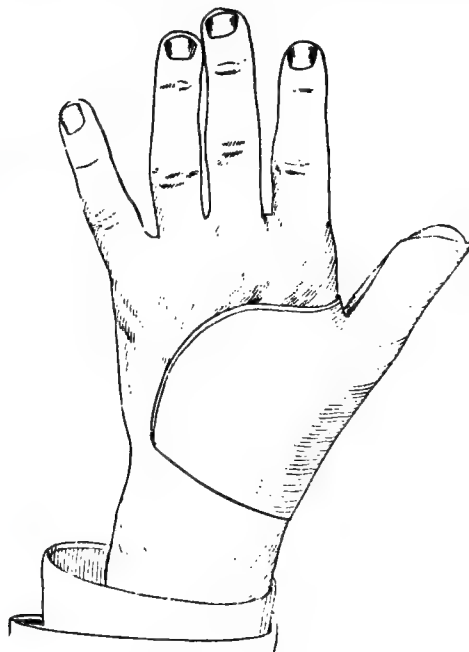


FIG. II. A Thumb Splint.

so treat it. In a fracture, however, there is such short bone leverage for effective pressure, that a modification is introduced by which the apex of the pyramid is raised upward and backward, and by suitable splinting fixed effectively in the desired position.

A THUMB SPLINT.

This splint is intended for fixation of the thumb, including its metacarpal bone. It embraces the thumb, that portion of the dorsum of the hand shown in the engraving, and somewhat more than the thenar eminence of the palm, care being taken to keep below the cross-palm lines that mark the region of the meta-carpo-phalangeal joints, so as not to hinder finger motions.

A SPINAL JACKET.

The blank for this splint is of the simplest pattern, having width sufficient to envelop the patient's body once and a quarter around, and its length governed by the amount of spine we wish to control. This particular jacket was made for and worn by a boy of six years.

It was moulded on the boy's body and completed at his home in less than forty minutes. The jacket's edges are covered with chamois skin glued on. The straps are of chamois skin also, and this material was used because of the ready manner it can be attached

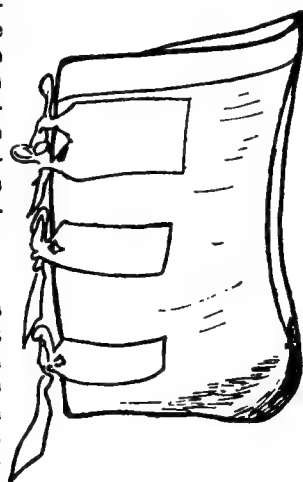


FIG. III. A Spinal Jacket.

to the jacket, and its toughness and friction preventing the giving or slipping of a bow-knot.

Before attempting a demonstration of splinting by this method, I must state that it is handicapped by the amount and quality of the material at hand. That manufactured so far has been finished by hand-labor at the pulp mill. It has been distributed among Boston surgeons, several of whom have kindly signified to me their pleasure in testing it. The supply is now exhausted, I hope not for long. Mr. Charles H. Fisk, of Manchester, N. H., the gentleman who has undertaken to put the material on the market, has written me that machinery will be constructed to manufacture it cheaply and expeditiously.

[The making of a palmar forearm splint was here demonstrated. The splint meets the indications which Cheever emphasizes in the treatment of a Colles' fracture. He says: "The important point would seem to be . . . not to press the back of the wrist down in such a way, by splints, that we shall lose sight of this arch, which is so marked, under the radius. . . . This arch must be well supported. . . . The splint should terminate at the head of the metacarpal bones, and the thumb and fingers should be left free."²]

In concluding, fellow-practitioners, I thank you for your kindness and energy in braving to-night's snow-storm, to meet here; and I ask you, if pleased with this splint material, to take hold of it and develop its various applications, which have been so briefly hinted at; then, perhaps, in later years we can all look back on work done, and done well, and feel that we have done some little to advance surgery — American surgery.

Clinical Department.

A CASE OF MYXŒDEMA.

BY ROBERT E. BELL, M.D., LOWELL, MASS.

THERE has been so much written on this subject, and it is so prominently before the profession, that I wish to report my one case, as it has presented some features that I have not seen mentioned.

Mrs. B., fifty-four years of age, consulted me first January 7, 1894. Family history good. Father and mother both lived to be almost seventy; two brothers and four sisters living. She dates her symptoms from about eighteen months ago. She comes to me because she cannot see to read, and thinks her glasses need changing. $V=\frac{1}{2}$; glasses do not improve her vision. Ophthalmoscopic examination simply shows the fundus somewhat paler than normal.

Patient says that about eighteen months ago her face and hands began to bloat, and she had difficulty in keeping hold of objects in her hands, was constantly dropping dishes, etc. Then her limbs began to swell; and finally she noticed she could not get her clothes on alone, her arms were so useless. She had become very sensitive to cold. Her hands and arms pained her so she could sleep but a few hours. Was dizzy, and felt like falling if she attempted to walk. No appetite. Urine at times was very heavy and almost black. She could not go up stairs without getting out of breath. When she came to me, there was pallor of

the face and a puffiness about the eyes. There was œdema about the ankles and legs. The skin of the hands was dry and rough. The hair had no lustre. She talked very slowly and deliberately, and walked as though completely tired. Examination of urine was negative.

Supposing I had a case of myxœdema to deal with, I ordered the thyroid extract of Parke, Davis & Co., in doses of five grains twice a day. At the end of one week patient was better, but complained of some nausea, and pain in her back and legs. I decreased the extract to three grains twice a day, and kept it up until the middle of February, then reduced it to about two grains a day.

At the present time she considers herself well. I certainly never saw a more marked improvement in any patient. She eats well, sleeps well and breathes well. Her vision is now all right with the lenses suited to her age.

Medical Progress.

REPORT OF PROGRESS IN GYNÆCOLOGY.

BY F. H. DAVENPORT, M.D.,

Instructor in Gynæcology, Harvard University.

THE CAUSE OF PERITONEAL ADHESIONS AFTER ABDOMINAL SECTION.

WALTHARD¹ has conducted a series of experiments in the Pathological Laboratory of University College, London, to ascertain the cause of peritoneal adhesions after abdominal section, with a view to discover the way to avoid that complication. He found that prolonged contact of normal peritoneum with atmospheric air caused necrosis of the superficial layer of cells. This injury, even when strict asepsis is carried out, favors the formation of adhesions. It speaks in favor of rapid operating, but many gynæcological operations and procedures for disease and damage to the intestine cannot be performed quickly; hence there must always be danger of peritoneal adhesions when the course of the case is aseptic, and of suppurative peritonitis when accidental infection occurs. The great aim of the operator is to make sure that the peritoneal cavity is thoroughly cleared of all fluid or semi-fluid material by the usual "toilet." In short, the serous membrane must be kept from the contact of fluid, but not allowed to become dry by exposure to air. This Walthard calls "dry asepsis."

When the cavity cannot be kept dry, as in many long operations, "moist antisepsis" is required. In other words, the peritoneum is flushed out with water at 100° neutral, and preferably containing chloride of sodium. The loss of its shiny appearance is the evidence that the serous membrane is becoming dry.

URETERO-VAGINAL FISTULÆ.

Hochstetter² has been able to find records of thirty-nine cases of uretero-vaginal fistulæ, of which twenty-three were caused by difficult labors, ten followed total extirpation of the uterus, two the opening of a pelvic abscess, one the spontaneous breaking of an abscess, one from ulceration caused by a pessary, and in one case the cause was not given.

The frequent performance of vaginal hysterectomy

¹ Lectures on Surgery. By David W. Cheever, M.D. See Lecture X, Boston Medical and Surgical Journal, vol. cxxix, p. 2.

² Correspondenz. Blatt f. Schweiz. Aertze xxxiii, 1893, reported in British Medical Journal, December 2, 1893.

³ Arch. für Gyn., xiv Band, 1 Heft, 1893.

makes the study of fistulæ from this cause of interest. Ligature of the ureter of one side is difficult of recognition in the first days after the operation, since there is often from other causes a diminution in the amount of the urine. The cystoscope, or catheterizing the ureters, would assist materially in making a diagnosis. Ligature of both ureters is recognized by absolute anuria. If such a diagnosis is made early, the immediate removal of the ligatures may result in a restoration of the function of the ureters and the avoidance of a fistula. Two such cases are referred to.

The diagnosis of a ureteral fistula is an easier matter. The patient loses only a part of the urine, about a half, the bladder is intact, as shown by injecting it full, and the sound does not pass from the fistula into the bladder, but from the bladder through the fistula into the vagina.

The treatment of such a fistula is, in the first place, by cauterization, care being taken not to cause so much swelling as to close the ureter. If the ureter is not wholly cut through cure may follow, and several such cases have been reported. If this fails, operative treatment should be tried. Simon advised changing the ureteral fistula into a uretero-vesico vaginal fistula, and then closing, but his attempts failed. Landau suggested passing a thin catheter from the vagina into the ureter, carrying the free end through the lower segment of the ureter into the bladder and out through the urethra, refreshing the tissues on both sides of the catheter and uniting them. There have been several successes by this method.

A modification of this procedure by Schede consists in making a vesico-vaginal fistula, and then turning the open end of the ureter into the bladder. The details of this method should be read in the original in the *Centralblatt für Gynäkologie* for 1881, No. 23. A case operated on by Schede, and one the account of which is given in the article under review and three by other operators were successful.

If such attempts at cure fail, there are two courses open, the closure of the vagina below an artificial vaginal fistula, and the extirpation of the kidney of the affected side.

VENTRO-FIXATION OF THE UTERUS.

Napier and Schacht^a divide ventro-fixation into two great varieties, indirect and direct. The first fixes the uterus by means of its ligaments or the pedicle of an ovarian cyst, etc., in the course of another operation; the second requires suturing of the uterus itself. Direct corporeal uterine fixation may be either lateral or median. The authors favor the median method, and the essential feature consists in passing three sutures through the edge of the rectus muscle, the fascia, peritoneum of the left side, the uterine wall, and the same structures of the right side, one at the fundus, one as near the intra-peritoneal cervix as possible, and one midway between these.

The conditions which justify such an operation are when uterine retroflexion or procidentia occasions such symptoms as unfit a woman for her life-work, provided other forms of treatment and minor operative measures have proved non-curative. Age is an important factor. Of twenty cases operated on by the authors, seventeen were under forty years of age. There were eleven cases of retro-displacement, nine of prolapse. Ten had been done long enough before the report to judge

of permanent results, and of these only one was a failure, and that was due to the dragging of cervical fibro-myoma. There were extensive adhesions in five cases, in fifteen there were none or they were easily separated. Two deaths occurred in the series, one from sepsis and one from hæmorrhage and shock.

CONSERVATIVE TREATMENT OF DISEASES OF THE UTERINE APPENDAGES.

Pozzi⁴ refers in this paper, in addition to operations on the tubes and ovaries themselves, to methods of treatment of the uterus diseased at the same time as the tubes, which have for their object the cure of the latter, such as curetting, cauterization and electricity. Such measures Pozzi believes may be useful in the first phases of acute catarrhal salpingitis, but illusive in pus cases or in chronic cases where the walls are thickened. Massage and electricity should be applied to diseased appendages only in chronic cases where the tubes contain no liquid. The conservative operation which has been proposed in cystic salpingitis in order to induce the evacuation of the liquid by dilatation of the uterus and of the ostium internum of the tubes, is dangerous on account of the likelihood of provoking inflammation of the neighboring peritoneum and is usually impracticable by reason of the extensive obliteration of the tubes in the vicinity of the uterine cavity.

In discussing the main topic of the paper, namely, operations bearing directly upon the ovaries or tubes for removing the diseased and respecting the healthy part, he considers two procedures, resection and ignipuncture of the ovary.

With regard to partial resection of the Fallopian tubes, Pozzi eliminates it from the number of conservative operations. He believes that once having been attacked by acute inflammation, it has become definitely incapable of fulfilling its physiological rôle. The rôle of the Fallopian tube is not that of an inert duct; it is essentially active; the integrity of its texture, the persistence of its vibratile epithelium and its contractile fibres are conditions indispensable to its function. Therefore an inflammation of some duration must surely destroy or definitely paralyze these active elements.

It is entirely otherwise with the ovary. It is well known that a small quantity of ovarian tissue suffices to assure the regularity of menstruation and to permit fecundity, hence there are more than theoretical considerations in favor of partial resection of the ovary. The persistence of menstruation is constantly remarked if a fragment, however small, is left, and several observations prove that its fecundity is preserved.

It remains to be determined in what cases of lesions of the ovary a partial operation can be made, and to decide the nature and technique of this operation. The first general consideration is that whenever the Fallopian tube is healthy and the ovary alone diseased, it is wise to preserve a part, and only at the last extremity make a total sacrifice.

The most favorable cases are those in which the diseased process has affected one region of the ovary leaving an entire segment of the organ intact. A typical lesion is an isolated cyst, in which case, after it has been ascertained that the tube is completely permeable by the passage of a stylet, the surgeon performs the resection of the diseased parts by two incisions

^a British Medical Journal, October 14, 1893.

⁴ British Medical Journal, September 16, 1893.

which circumscribe a cuneiform segment. The two lips of the wound are reunited by a continuous suture in catgut. Resection may also be employed in cases of microcystic degeneration, in which the disease has left a zone of ovarian tissue intact. It is frequently found that a large part of the organ is thus affected, whilst in the region of the hilum, a band of tissue exists untouched by disease. An incision can be made along this line, removing the greater part of the ovary, but preserving the base of the organ. Pozzi, in addition, in cases where it has been necessary to liberate the Fallopian tube by tearing off adhesions, fixes the ostium of the tube upon the ovarian stump by means of a few points of suture, in order to prevent the tube from falling away from the rest of the ovary and contracting adhesions.

Lately, Pozzi has practised ignipuncture instead of resection. He considers it more expeditious and doubtless more efficacious than resection. When the ovary presents dispersed lesions such as cysts of small volume, they are opened successively by the small knife or thermo-cautery, and burned on their internal surface. Where there is diffuse ovaritis it is advisable to make the point of the cautery penetrate rather deeply into the oedematous stroma. He has no doubt that the actual cautery has a distinct influence in producing an energetic melting of the chronic inflammations.

In answer to the objection that the cautery would be liable to produce sclerosis, Pozzi says: "Assuredly this might be the case were the cauterization followed by the falling away of the eschar from suppuration and granulation. But in the interior of the peritoneal cavity the process is quite different; it is essentially aseptic. The eschar is reabsorbed, molecule by molecule, without inflammatory process or embryonic proliferation susceptible of becoming a nodule of fibrous tissue."

The practical results in Pozzi's cases have been satisfactory. He has performed resection of the ovary six times and ignipuncture eight times. All the patients recovered, and in all, either immediately or later, the pains ceased or were greatly diminished, and in those who before had suffered from menstrual irregularities there was improvement. One patient became pregnant, in whose case he made twelve deep points of ignipuncture in the left and eleven in the right ovary. The ovaries were white, smooth and enlarged and affected with diffuse ovaritis.

His experience is recent and extends over a period of a little more than two years. The results are, however, very encouraging, and taken together with those of Martin, may serve to encourage operators in a new path.

THE SO-CALLED "CONSERVATIVE OPERATIONS" ON OVARY, TUBE AND UTERUS.

The partial operations on ovary, tube and uterus in case of tumors and other diseases, have, according to Martin,⁶ found so little favor that he has been led to call attention to them again. The resection of one ovary after extirpation of the other, in particular puncture of hydropsical or hemorrhagic follicles, has been performed by Martin twenty-seven times; of twenty-four operated on in the last method, eight became pregnant later. As soon as the disease of the ovary has left no functionally-active ovarian tissue and especially where a purulent process has been recognized

the extirpation of the whole ovary is indicated; for the small number of cases in which there is chronic oöphoritis or circumscribed new growths, Martin recommends partial resection. The resection of occluded tubes after extirpation of the other diseased tube Martin has performed forty times; one woman conceived later. Of the one hundred and forty-one enucleations of intra-parietal myomata, twenty-six women died; of the one hundred and fifteen that lived, five developed new tumors and two conceived again.

Martin claims that these conservative operations offer no greater dangers than the radical, that the women are almost universally freed from their sufferings and remain so, that relapses or affections of the resected organs rarely occur, that the feminine functions remain intact, that pregnancy is possible even with such partially preserved organs and that finally the birth occurs without especial danger.

ENDOMETRITIS IN THE MENOPAUSE.

Jacobs⁶ is opposed to the view that the menopause has a curative effect on endometritis and leucorrhœa, that being the exception and not the rule. He describes the degenerative changes of the genitalia in the menopause, the symptoms of endometritis and their differential diagnosis from carcinoma, and calls especial attention to the fact that even in non-malignant disease the discharge may be foul-smelling. As general symptoms he mentions pallor, wasting away, indigestion and obstinate constipation; occasionally neuralgia and mental disturbances occur. Chronic eczema, urticaria, acne, pruritus vulvæ and mucous polypi in the uterus are frequent accompaniments. Usually the disease has existed before the menopause. As therapeutic measures the author advises at first building up the general health, then curetting followed by local treatment.

ENDOMETRITIS PURULENTA SENILIS, SEU ATROPHICANS.

Patru,⁷ under this name, describes a disease which has been noticed by only a few authors, notably Fritsch. It has clinically, as well as pathologically, a resemblance to ozæna and occurs in women over sixty, especially in those who suffer from cardiac affections. It can be caused by bacteria of a type very little studied, which develop in the atrophied mucous membrane and cause a more or less foul purulent discharge which occasionally is bloody. In the discharge are found various forms of bacteria, red and white blood corpuscles and a polygonal, atypical, uterus epithelium. The discharge is either constant and scanty, or intermittent and profuse. The patients complain of moderate pain in the back lower abdomen, the uterus is usually normal in size and moderately tender. The complexion is sallow and can, in connection with the fetid discharge, simulate malignant disease, although the cervix is small and soft and shows no swellings or ulcerations.

The vagina may be inflamed and adhesions of the walls may occur; perhaps the little studied vaginitis adhesiva is only a secondary affection and result of senile endometritis. The prognosis is favorable and the disease gradually disappears with age; whether malignant degeneration occurs is not known. The thing to be feared is sepsis from retained secretions and cachexia from chronic secretion of pus. To avoid

⁶ Cent. für Gyn., 1894, No. 4.

⁷ Rev. méd. de Suisse rom., 1893, No. 5.

⁸ Deutsch. Med. Woch., xix, 30, 1893, reported in Schmidt's Jahr.

his the treatment should consist in dilatation of the cervical canal, curetting, cauterization of the inner surface of the uterus and daily vaginal injections.

Reports of Societies.

CAMBRIDGE SOCIETY FOR MEDICAL IMPROVEMENT.

ALBERT E. TUTTLE, M.D., SECRETARY.

A MEETING of the Society, February 26th, with DR. HENRY O. MARCY in the chair, was specially devoted to a discussion of

THE MALARIAL DISEASES OF THE CHARLES RIVER VALLEY: THE BEST METHODS FOR THE IMPROVEMENT OF THE SANITATION OF THE RIVER.

DR. R. W. GREENLEAF read a paper on

THE CHARLES RIVER IN ITS RELATION TO THE ETIOLOGY OF INTERMITTENT FEVER.¹

DR. H. C. ERNST: By common consent, we must consider the cause of most malarial diseases is a micro-organism. My experience with the subject under discussion is derived mostly from cases seen at the Massachusetts General Hospital, most of which came from Newton and regions about there already shown this evening on the map, and described in Dr. Townsend's report.

A plasmodium is not a form of bacterium; its existence in the blood has only been discovered a few years, and it has no relation to the bacterial forms of micro-organisms. They require special study, by new methods yet to be worked out. In many instances it is impossible to make a diagnosis between typhoid fever and malaria except by means of the microscope, which may reveal with proper preparation the hæmatozoon of malaria.

In order to make this examination, a bottle containing equal parts of alcohol and ether, and cover-glasses should be taken to the bedside of the patient; the cover-glass is to be carefully cleansed, a slight puncture of the patient's finger is made with a fine needle until a small drop of blood can be squeezed out, a thin layer of blood is spread over the cover-glass and carefully dried; then the glass is placed in the bottle containing the alcohol and ether, and kept until time for examination. To examine the specimen, it must be doubly stained by first immersing in a saturated solution of eosin in alcohol, or placing a few drops of the same on the cover-glass and allowing it to remain for ten to fifteen seconds; it is then washed off with water and treated with a saturated alcoholic solution of methyl-blue, when it is finally washed, dried and mounted. By this means the red corpuscle is stained red and the plasmodium blue. Under the microscope, it is found to be an amœboid form with dark pigment spots in the centre, which divides, and just before complete division assumes a seven-petalled, daisy-like form.

Dr. Ernst exhibited under the microscope the plasmodium of malaria.

DR. STEVENS said he could endorse the observations of Dr. Greenleaf. Most of the cases he had seen were a long way from the river, near fresh-water

brooks, old water-courses which were now drained or filled up, and standing water (as the old reservoirs in Cambridge and on College Hill, Somerville, and especially in Arlington). Before 1886 he had seen very few cases of intermittent fever in Cambridge; then it rapidly increased; but during the last five years it had greatly fallen off, so that at present there was not over one-quarter of the cases that formerly existed.

DR. DURGIN, in discussing the question of improvement of the sanitation of the river, said that official attempts had been made to remove the drains which emptied into the river from the Boston side along Beacon Street, and that these attempts had succeeded in part. The sewerage from the abattoirs of Brighton was no longer poured into the river. Some drains along Beacon Street were under discussion, and action was delayed in their removal to prevent unnecessary expense on the part of the land-owners in case the property behind their houses on the river bank should be taken by the Park Commission for improvements on the river.

DR. H. J. BARNES said he was glad to hear that Boston had done so well toward improving the sanitary condition of the river. Last year 80 drains emptied into Stony Brook, and thence into the Charles River. It was not long ago that he looked into the brook and saw a great amount of fecal matter floating about, which made him think of the conditions at Moon Island as he found them last summer.

During every great rainfall the flood-gates are opened into the Charles; the idea is maintained that by this means a large quantity of water is forced through the sewers, which are thereby flushed clear of their contents and maintained in a good condition. This is an erroneous conception, since except, perhaps, in times of drought, the ordinary circulation in the sewers is sufficient to keep them clear; and as their discharge into the river causes the accumulation of a great quantity of slimy, dirty material about the mouth of the drains which at times is very offensive, they should be done away with. He would not like to live in his house on Beacon Street in the summertime from this cause alone. What he had said about the mouths of the flood-gates was equally true of the condition of Stony Brook outlet in the Charles. Some people had informed him the smell about the place was simply that of dock odor, and not injurious to the health; but obviously it was a product of decomposing organic matter, and undoubtedly it was the reason that the organisms so useful in purifying the river no longer existed. At one time there was an extensive bed of oysters in the river, but they could not live where the sewerage rendered water so impure; and he had made the same observations at Moon Island, the shell-fish about the gateway having all died out.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, February 5, 1894, DR. INGALLS in the chair.

CANCER OF THE CERVIX. — PATHOLOGICAL SPECIMENS.

DR. SWIFT: I thought this specimen would be of interest as it shows a number of pathological condi-

¹ See page 363 of the Journal.

tions occurring in one patient. It is a case of cancer of the cervix, in which there is also a fibroid on the anterior wall of the womb. On the right side there was a tubo-ovarian cyst, and on the left a hydro-salpinx. The case was also interesting as showing how easily in these pelvic troubles a wrong diagnosis may be made. This patient was first seen a year ago by a gynecologist in this city, the complaint being back-ache. It was found that she had an epithelioma of the cervix. He evidently felt this fibrous nodule and these tumors in the sides of the pelvis, for he told her that she had cancer of the uterus, and that the disease had extended so far that she could not be cured, but benefit would be derived from operation, and he was willing to undertake the operation of hysterectomy. She consented, but her friends objected. As time went on she became worse, and was taken into the City Hospital. There the same diagnosis was made and a radical operation was refused. The cervix was curetted, but the symptoms (pain) continued. She was practically bedridden. She came to me at the dispensary a while ago, and demanded that something be done. She said that with the history no hospital in the city would take her in. They refused her on the ground of her having cancer, an incurable disease. I examined her and made the same diagnosis that had been made previously. She was anxious to have the operation performed. Under ether it was found that these masses on the side were movable, evidently not attached to the pelvic walls, and there was some hope of getting out the whole mass. The disease by this time had extended down onto the anterior wall of the vagina, and I began the operation by dissecting up the vagina and removing all the diseased tissue that I could. I opened the peritoneal cavity from below, and putting my finger in there, found this large cyst on the right side perfectly free, and a smaller cyst on the left side, also free. On opening the abdomen these things came out without any difficulty at all, and if the operation had been done a year ago, probably her chance of ultimate recovery would be much greater than it is now. The operation was done last Friday, and the woman to-day is in very good condition.

DR. C. M. GREEN read a paper entitled

FOUR UNUSUAL CASES: I. IMPERFORATE HYMEN WITH HÆMATOCOLPOS; II. MUCOUS CYSTS OF THE VAGINA; III. RECTO-VULVAR FISTULA; IV. SALIVATION OF PREGNANCY.¹

DR. FORSTER: I was present with Dr. Green and saw the third case. It was a very interesting one and I took a sketch of it at the time which I think gives a pretty fair idea of the condition of the parts. It looked like a rupture of the perineum following labor, except that the vagina was entirely intact.

DR. WHITTIER: I was very glad to hear Dr. Green's paper on this form of reflex neurosis. I have never been able to understand why in the same individual it should be so constant in succeeding pregnancies when the chief of reflex neuroses, vomiting, is so inconstant and so variable. I have had three cases corresponding to the disorder described, and I think Dr. Green will remember I ventured last season to ask him with reference to the remedies that might be employed. The first case was seventeen years ago and in the succeeding pregnancy it was quite as un-

manageable. Four years ago a lady with her first pregnancy had among the earliest symptoms salivation, which continued during the whole period of pregnancy to an extreme degree, without the slightest sign of reflex disturbance in any other direction, and continued several weeks after the completion of pregnancy. I was of the opinion at that time that the continuance after the birth of the child was coincident with and dependent upon sub-involution of the uterus, which was present to a notable degree in that case. In the succeeding pregnancy, the earliest symptom of pregnancy preceding even the absence of the menstrual period, was salivation. This continued during the whole of pregnancy and lasted seven weeks after the completion of it. A lady consulted me last week who for five successive pregnancies, none of them completed, had as the first intimation, salivation. I need not say that we shall all accept Dr. Green's statement that this condition is, so far as remedies are concerned, quite unmanageable. I doubt if we may, with any degree of hope, expect to apply to this any remedy, such as those employed in the other so-called reflex neuroses of pregnancy, with fair success, for from all that I can learn of this disorder, it more nearly than any other deserves the title, incoercible.

DR. WASHBURN: I have been very much interested in this series of cases. In regard to the last one, I have now under my care a patient who has been troubled very much with salivation, and in that case there was an excessive amount of nausea and vomiting accompanying the salivation. The salivation was not as excessive as in some of the cases Dr. Green has spoken of, but it was constant and extremely annoying, and would amount to from a pint to a quart in the course of twenty-four hours. I tried a series of different things to see if anything would have any effect. Nothing had much effect, but I thought what gave the most relief was a combination of bromide of sodium with the effervescent bromo-cafeine, given in doses of ten grains of the bromide of sodium dissolved in water, to which afterwards a teaspoonful of the effervescent bromo-cafein was added. In that way it seemed to agree with the stomach perfectly, and it gave a little relief to the salivation.

In regard to the cases of cyst of the vagina, I saw a case about two years ago, that showed the possibility of error in another direction. A woman came to me with a small enlargement on the anterior wall of the vagina, about the junction of the outer and middle thirds, which apparently was a vaginal cyst. Examination, however, showed that the contents of it could apparently be squeezed out, and I found that a fine probe passed into the urethra could be gotten to enter this little sac. It would often be quite distended with the urine and a little *débris* that collected there. It gave her a great deal of discomfort in various ways and I finally opened it and denuded the surface, and sewed up the little fistula into the urethra, and the thing healed very well, and she has been perfectly comfortable ever since. But the first examination of that gave every appearance of being a vaginal cyst. A vaginal cyst which I saw recently was situated almost at the vaginal outlet, and the size of an English walnut. In three or four cases I have seen, the cyst has been along about the middle third of the vagina. I think that the way to reach these always is by the operative method, and my experience has been that of Dr. Green, that very often you cannot find any cyst

¹ See page 356 of the Journal.

fall to dissect out. You simply have to lay it open and take off a piece of the outside, scrape it out and let it granulate up in that way.

DR. BUCKINGHAM: I have met with one case of salivation in pregnancy, and like those of Dr. Green and Dr. Whittier, it had appeared in a former pregnancy as well. It was so severe that the patient spent her whole time on the bed, with her head over the edge, and her mouth draining into a basin. She was much emaciated and the condition would have been alarming but for her assurance that she had suffered even more in her former pregnancy. Each time salivation ceased about the fifth month. She was treated with a number of drugs commonly used for the neuroses of pregnancy, the only one doing any good being atropia. I do not believe that that hastened recovery, but it gave considerable temporary relief, and it could be repeated.

Recent Literature.

A Text-Book of the Theory and Practice of Medicine. By American Teachers. Edited by WILLIAM PEPPER, M.D., LL.D., etc. In Two Volumes. Illustrated. Vol. II. Philadelphia: W. B. Saunders. 1894.

The second volume of this important work makes its appearance somewhat later than had been anticipated. It is a year since the publication of the first volume. In a certain measure this is compensated for by the incorporation of the latest investigations and studies in some subjects. The first 69 pages are devoted to general considerations concerning the biology of bacteria, infection and immunity, by Dr. W. H. Welch. It is interesting to compare this contribution with those from the same pen on kindred subjects in the last edition of Flint's "Practice of Medicine," published in 1886. One may thus get a striking illustration of the activity and advance of research in this department of medical science during the short space of eight years. Dr. William Pepper contributes 325 pages out of the 1,000 pages of text contained in the volume, and writes on diseases of the heart and its membranes, of the blood-vessels, of the mediastinum, of the mouth and tongue, the salivary glands, the pharynx and tonsils, of the esophagus, the stomach and the intestines. Dr. R. H. Fitz treats of diseases of the peritoneum, the liver and the pancreas. Dr. Francis Delafield has considered diseases of the lungs and of the kidneys; Dr. James C. Wilson, diseases of the nose, larynx, pleura and bronchi; Dr. William Osler, diseases of the blood, of the supra-renal capsules and ductless glands; Dr. James W. Holland contributes a chapter on practical urinary examination; and Dr. Henry M. Lyman chapters on dietetic diseases, the acid dyscrasia, rickets, osteomalacia, obesity, biliary lithiasis, gravel, saccharine diabetes, polyuria, rheumatoid arthritis, gout and rheumatism.

The title-page states succinctly the plan upon which the work is made up; the names of authors embrace a number of the prominent teachers of clinical and theoretical medicine in the chief medical schools of this country, and may be held in a measure as a guarantee of the character of the work.

The paper, the letter-press, and most of the illustrations, which are numerous—are first-rate. Each volume has a separate and full index.

Holden's Manual of the Dissection of the Human Body. Edited by JOHN LANGTON, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, etc. Sixth edition, revised by A. HEWSON, M. D., Demonstrator of Anatomy at Jefferson Medical College, etc. 311 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

This new edition of a well-known work calls for no very extended comment. The bulk has been reduced by putting the more minute points in smaller type. The binding is more simple and well adapted to the dissecting-room. There is a great deal in this work that explains its continued success. For our part we think it would have been wise to omit all minute anatomy. The dissector can have nothing to do, for instance, with the plan of the renal tubules, nor the blood-vessels of an intestinal villus. All this is out of place, if the book is intended to be merely a manual of dissection. We are least pleased with the treatment of the abdominal viscera, and would particularly protest against the implication that the back of the cæcum is often or usually destitute of peritoneum. T. D.

Healthy Hospitals: Observations on Some Points connected with Hospital Construction. By SIR DOUGLAS GALTON. With illustrations. Oxford: Clarendon Press. 1893.

The author's object in writing this book was to place on record those principles which ought invariably to be followed in every good hospital, and to point out those conditions of construction which according to recent practice represent the minimum standard required to be followed in building a new hospital. The author does not enter upon the detailed requirements of hospitals for special diseases, entailing in some cases separation of patients, in others special curative adjuncts. He recognizes the probability that a large number of new hospitals for infectious and other diseases will have to be built in the next few years, and endeavors to impress the importance of simplicity of design and moderation in cost. The book is one which those interested in hospital construction should consult.

The Physician's Wife; and the Things that Pertain to Her Life. By ELLEN M. FIREBAUGH. With portrait of author and 44 photo-engravings of original sketches. In one crown octavo volume of 200 pages. Philadelphia: F. A. Davis Co. 1893.

Mrs. Firebaugh has expanded what was probably a very interesting paper, as read to a club, into the proportion and dignity of a book.

It is difficult to believe that the author is really the wife of a physician, so much has been omitted that could have been said in regard to the peculiar duties, hardships and rewards of the life of a doctor's wife, and so many anecdotes contained in the 186 pages could have been related as well of the wife of a banker or a grocer. For instance, it is not clear why the fact of being a physician's wife should cause the lady in question to insist that cabbages should not grow in her front-yard, or why her husband, because he is a physician, should be equally determined that they should.

For a busy doctor's young wife, who is beginning to learn that her husband's time, and, it often seems, his interests also, must belong to his patients rather than his home, there is little to aid or comfort; while to the wife of many years much in the book will appear trivial and commonplace.

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BROWN-SÉQUARD'S TEACHING.

IN the recent death of Brown-Séguar — so well known personally to many of the readers of the JOURNAL as having been a citizen, practitioner and medical teacher for several years in this city, and a frequent visitor to this country — the world has lost the last of a distinguished band of experimental physiologists, with all of whom he had been contemporary, and who have helped to make this century fruitful in scientific discovery. The mere mention of the names of the most conspicuous in this band — Flourens, Magendie, Claude Bernard, Vulpian, Longet, Charcot — recalls some of the most valuable acquisitions in neuro-physiology of the past sixty years.

We shall not repeat the facts in Brown-Séguar's medical career mentioned in the JOURNAL of last week. His memoirs on the physiology of the nervous system in both French and English (he wrote with equal facility in both languages) are very numerous. He is best known in this country by his work "On Paralysis of the Lower Extremities," his "Experimental Researches applied to Physiology and Pathology" (New York, 1858), and his "Lectures on the Physiology and Pathology of the Central Nervous System," first delivered in London in 1858, and published in this country in 1860. This is an "epoch-making" book, and sums up his most important investigations on the spinal cord. In 1856, he delivered a course of lectures in Boston, on "The Pathology of Epilepsy," which attracted much attention; these were published in the JOURNAL in 1856 and 1857.

Probably of all his works, that on the "Physiology and Pathology of the Nervous System" has been the most read, and we well remember the eagerness with which it was sought for and read by students of medicine at the time of its publication, thirty-odd years ago.

It is impossible to overestimate the advantage which has accrued to science from these researches, so replete with originality, on perhaps the most difficult part of nervous physiology. We may point particularly to the

anatomical and experimental facts set forth in those lectures, showing the relative share of the gray matter and of the various columns of white matter in the transmission of both sensory and motor impressions, and to the demonstrations there given: (1) That the conductors of sensory impressions from the trunk and limbs decussate in the cord and not in the encephalon [Brown-Séguar, by the way, subsequently took this all back, and affirmed that the decussation does not exist¹]; (2) that in the dorsal region, the various parts of the cord except the posterior columns are instruments of volition; (3) that a small part of the cord may contain conducting elements from all parts of the body on the same side; (4) that the anterior columns have a share in the transmission of sensory and, particularly, tactile impressions; (5) that in cases where the gray matter is destroyed, sensibility is lost; (6) that the fibres of the sympathetic going to the blood-vessels of the head originate in the spinal cord from the roots of the last cervical and first and second dorsal nerves, etc. Brown-Séguar's investigations of the vaso-motor and cervical sympathetic nerves, and his doctrine on the "Transfer of Sensibility" are of the highest interest. With regard to the vaso-motor nerves, following Claude Bernard, he established that the effects of excitation of these nerves consist essentially in a contraction of blood-vessels with diminution in the blood flow, in the temperature, and in the activity of nutrition. He was the first to galvanize the sympathetic nerve. He showed, also, that irritation of the nervous system is a powerful direct or reflex cause of a great many morbid changes in nutrition, secretion, etc.

Brown-Séguar was the first artificially to produce epilepsy in animals by injuries to the spinal cord in certain regions, and to demonstrate the existence of an "epileptogenous zone" in guinea-pigs. His views as to the pathogeny of epilepsy are of the highest interest, though they have been in many points contested. Thus the "contraction of the blood-vessels of the brain proper," precursor of the loss of consciousness, was disputed, if not disproved by Vulpian, and the weight of authority to-day is against the view that the primary seat of epilepsy is in the medulla oblongata instead of in the cortex cerebri.

Dr. Brown-Séguar followed the teachings of Flourens respecting the functions of the cerebrum. According to Flourens, all the properties of the cerebrum are inherent in every part, and from this standpoint he made vehement war on the localizationists of the time, the phrenologists. Brown-Séguar was never willing to accept the modern views of localization, as they were expounded by Ferrier, Nothnagel, Charcot, Seguin and others; in fact, he always bitterly opposed these notions of cerebral physiology; and he has been cited as a striking example of the baneful influence of a strong prepossession or bias. As Agassiz could never see any force in the arguments of the evolutionists, so, to Brown-Séguar, Ferrier's experiments on monkeys

¹ London Lancet, August, 1880 (Am. Ed.), p. 188.

were only illustrations of reflex inhibitory action, not of direct irritation or of destruction of well-defined centres. He had accumulated facts which led him to believe that paralysis, anæsthesia, amaurosis, aphasia, and other effects of brain-disease are not dependent on loss of function of either the centres or conductors specially employed in voluntary movements, perception of sensations, power of expression of ideas by speech, etc. He taught that a lesion of any part of the brain may produce any symptom, and that, on the other hand the same symptom may appear, no matter where the seat of lesion may be. A lesion in any part of the brain can produce paralysis, either on the same side or on the opposite side of the body. A paralysis may appear on one side, then on the other side, although the lesion remains in one-half of the brain. As regards vision, facts, according to Brown-Séquard, show that a disease in one-half of the brain can produce hemiopia either in both eyes or one, and in the corresponding or the opposite halves of the retina, or a complete amaurosis of either of the two eyes or of both together, so also, anæsthesia, aphasia, loss of consciousness, etc., may arise from lesions in almost any part of the brain. One of the doctrines that he stoutly maintained was this, that the seat of each special function of the brain, instead of being a cluster of cells localized in a small part of the brain, is disseminated, so that the cells belonging to each are spread over a considerable extent, if not the whole extent of the brain.²

We have not space here to comment on these views; the work has been done by Charcot, Seguin, Foster, Soury, Luciani, Ferrier and others. It is enough to say that Brown-Séquard had a comparatively small following; that his peculiar teachings in which he combated with acerbity the views of his opponents were always listened to with respect and patience, but with incredulity by medical audiences; and that the physiology of to-day is moving farther and farther away from his positions. Brown-Séquard will always deserve a large place in the annals of medicine for the many facts with which he has enriched science, but, like Magendie, he was not a philosophic thinker, and though a good observer, he did not always correctly interpret the facts which he observed.

THE INTERNATIONAL MEDICAL CONGRESS.

THE Twelfth International Medical Congress came to a brilliant close on April 5th, and there seems to be little doubt that as regards the friendly relations of all the members and the generous hospitality of the entertainers, it has been the most successful meeting yet held.

The Congress was formally opened on Thursday, March 29th, in the presence of the King and Queen of Italy and the officers of the Court. Professor Baccelli delivered his inaugural address in Latin to an audience of six thousand persons. Prince Ruspoli,

the Syndic of Rome, extended to the members the welcome and hospitality of the city.

The immediate glory of the meeting; the dinners given by the foreign ambassadors to the officers of the various sections; the splendid lawn party given by the Queen to the whole Congress; the many private entertainments and public hospitalities of open gallery and museum; and the final banquet in the great court of the Baths of Caracalla when seven thousand persons were gathered together in the vast dismantled ruins of that unequalled athletic club of Imperial Rome, — all these, brilliant as they might be, were but rich appointments of the true feast.

Of the actual work of the Congress; its nineteen sections, each sitting for five days from 8 A. M. to 8 P. M.; its sixty-nine pages of titles of papers to be read; its five general meetings to listen to addresses by Babes, Bizzozero, Bouchard, Danilewski, Michael Foster, Abram Jacobi, Laache, Nothnagel, Stokvis, and Virchow, — it is too soon to speak. The value of such addresses and such extensive sectional work can only be appreciated after they have become widely known, thoroughly read and studied in full. Brief epitomes of such papers are apt to give, not merely unsatisfactory, but often false impressions of the statements, the arguments, the conclusions therein contained. On the arrival of our carrier pigeons, a thousand of which were set free at the close of the final banquet in the Thermæ, we may give our readers even more details than could have been sent by special cable. The list of speakers and papers was a most promising one for the real worth of the Congress.

MEDICAL NOTES.

A LONG MEDICAL LIFE. — Dr. Schupmann, who died recently in Geseke in Westphalia, was probably the oldest physician in Germany. During the first fifty years he was in practice it is stated that he never left his district for a single night, and he did not finally retire from active practice and the charge of the local hospital until he was past ninety years of age.

DANGER FROM HEATED CABS. — The introduction of heating apparatus in some of the public carriages of this city, while of great comfort to the rider, makes worthy of note the following cases reported to the Académie de Médecine of Paris, by M. Dr. Brouardel: "On the 31st of last December a cab-driver who went to sleep in his cab for half an hour after closing the windows was found dead, and the autopsy showed that the death was due to poisoning by carbonic oxide gas from the heating apparatus. On the same day a physician, after an hour's consultation, entered his heated carriage without noticing that the windows were closed. In a few minutes he became dizzy, nauseated, and was seized with such muscular weakness that he could scarcely lower the window. The serious effects of this brief exposure to the gas lasted some ten days." In the discussion following this report it was stated

² See Brown-Séquard's lecture in the *Lancet*, April 5, 1876, and the *Lancet's* comment on the lecture.

that from five to eight deaths are reported every winter in Paris from gas-poisoning in heated cabs. Another physician since then has nearly lost his life in a similar manner, being found by the driver, unconscious on the seat.

MEDICAL CHARITIES OF LONDON.—The present discussion in English medical journals on hospital and dispensary abuse can be better appreciated after realizing the large number of institutions of direct medical charity. The *Directory of Metropolitan Charities* gives the following list of hospitals and dispensaries in London, not including foundling asylums or diet-kitchens: "Twenty-five charities for the blind, seven charities for deaf and dumb, five charities for incurables, two charities for idiots, sixteen general hospitals, eight consumption hospitals, five ophthalmic hospitals, three orthopedic hospitals, five skin hospitals, sixteen hospitals for women and children, four lying-in hospitals, twenty-nine miscellaneous special hospitals, twenty-nine general dispensaries, thirteen provident dispensaries, six institutions for surgical appliances, twenty-six convalescent institutions, seven nursing institutions." They number 206 in all.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon April 11, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 42, scarlet fever 45, measles 9, typhoid fever 10, small-pox 3 (with 3 deaths). There are at present ten cases in the Small-Pox Hospital. During the week one case of small-pox was reported to the State Board of Health from Chicopee.

THE MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY.—The programme of the annual meeting of the Massachusetts Homœopathic Medical Society included a luncheon at the State Insane Hospital at Westborough.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF PHYSICAL EDUCATION.—The ninth annual convention of the American Association for the Advancement of Physical Education was held last week in New Haven, Conn., with an attendance of nearly four hundred delegates.

A SUIT FOR DAMAGES IN A CASE OF SMALL-POX.—A suit for \$15,000 damages has been brought against the Selectmen of Ansonia, Conn., by the father of a boy who was taken to the small-pox hospital of that town by order of the selectmen in 1892. The boy died of the small-pox, and the father claims that the removal was the cause of death.

NEW ENGLAND ALMSHOUSES.—The Boston Almshouse is not the only one at present under investigation as to the methods employed to give the inmates the full benefit of money appropriated for their care. The Portland, Me., city government has been asked to investigate the almshouse, and to restrain the board of overseers of the poor from holding their regular

monthly dinners at the almshouse at the cost of the city.

A CASE OF CATALEPSY IN LOWELL.—A woman was found apparently dead in Lowell last week; and on the arrival of the ambulance gave none of the ordinary symptoms of life when examined by the surgeon. Just as the ambulance drove up to the undertaker's establishment, the surgeon noted a flicker of the eyelids, and the patient was carried, still insensible, to St. John's Hospital, where after several hours' treatment she rallied from her cataleptic state.

TOWN CLERKS AND MEDICAL ORTHOGRAPHY.—Massachusetts town clerks have a fearful struggle with the nomenclature of disease as presented to them in the certificates of death returned to them by physicians. The following are some of the diseases of which citizens of this commonwealth were said to have died in the year of our Lord 1893, taken *verbatim et literatim* from town reports: In Wellesley—taber dorsalis, extensive bronis, acute ayetitis, asphyxia neonatonim, gastirentiritis, chronic parenchymatoes; in Milford—sewicility (aged seventy-two), nutral disease of the heart, gastertis, caranomia, suppressaricella [Query, Was this Ayer's Sarsaparilla?].

REPORT OF THE PERKINS INSTITUTE.—The sixty-second annual report of the trustees of the Perkins Institution for the Blind shows a continued increase in the number of pupils and in amount of work done at the school and kindergarten. There are now one hundred and forty pupils in the school proper at South Boston and sixty-four in the Kindergarten at Jamaica Plain and seventeen in the workshop for adults. The director's report says that the progress of the three blind and deaf children, Edith Thomas, Willie Robin and Tommy Stringer, has been more than satisfactory. They have been placed in the regular classes and subjected to the same rules as others, the only difference being the presence of their special teacher as interpreter. Their progress compares favorably with that of their classmates, and doubt can no longer be entertained of the feasibility of educating children thus deprived. The number of these is sufficient to make it a duty to seriously consider the means of their education. The schools for the deaf generally have no provision for the blind child, or the schools for the blind for a deaf pupil.

NEW YORK.

TUBERCULOUS CATTLE DISCHARGED BY THE STATE BOARD OF HEALTH FOR LACK OF FUNDS TO INSPECT THEM.—It is greatly to be regretted that the present Legislature has neglected to make a suitable appropriation for the further carrying out of the act passed last year, which conferred extraordinary powers on the State Board of Health for the purpose of stamping out tuberculosis and other contagious diseases among cattle. For some time past the Board has been seriously crippled for lack of funds, and last month, when it was notified of the existence of tuberculosis in the cows of Colonel

Beecher, at Yonkers, whose grandchild died of tubercular meningitis, the Secretary of the Board, Dr. Balch, wrote in reply that it would be impossible for the State officials to make an examination of the animals mentioned for some months at least. "This department," he said, "is working under a very small appropriation for tuberculosis, and unless the present Legislature makes an additional appropriation, it will take us several months to attend to the requests already on file." And now, under date of April 6th, the Board has issued an order directing the release of cattle suffering from tuberculosis and the discharge of cattle inspectors, because of the insufficiency of the funds at its disposal. This order has naturally caused great indignation among cattle-owners, many of whom have sacrificed some of their most valuable stock for the purpose of exterminating the disease, and it is feared that the most serious consequences will ensue. A large number of tuberculous animals have been quarantined awaiting slaughter, and the order to release them permits their sale and distribution throughout the State and the country at large.

A COMMISSION TO INVESTIGATE TENEMENT-HOUSES.—The Legislature has passed a bill which provides for a committee of seven citizens, including Dr. Cyrus Edson, Commissioner of the Board of Health, for the purpose of investigating the condition of tenement-houses in New York. The commission is authorized to employ counsel and a stenographer, and to compel the attendance of witnesses, and \$10,000 is appropriated for its expenses.

Miscellany.

THE USE OF ANTIPYRETIC METHODS IN THE TREATMENT OF SCARLATINA.

DR. JOHN CARSLAW, of Glasgow, in a paper on "The severer forms of scarlet fever, with special reference to antipyretic methods of treatment,"¹ based on the study of six hundred and thirty cases, draws the following conclusions in regard to the external use of applications of cold and tepid water:

(1) That, in the large majority of cases, they are not required.

(2) That, even in simple cases, and in anginous cases, tepid spongings are useful in allaying restlessness and giving comfort — if the rash has not developed, the addition of mustard being an advantage.

(3) That mustard spongings are particularly useful during the earlier stages of an attack in which nervous phenomena are prominent.

(4) That for the hyperpyrexia of such (nervous) attacks, especially if the rash has developed, repeated cold wet packing is a convenient and efficacious method of treatment, general improvement often following its use.

(5) That local applications to the head may sometimes be of assistance.

(6) That, in all cold applications, there is need for the exercise of the greatest care.

¹ Glasgow Medical Journal, Nos. I and II, 1894.

THE INTERNATIONAL SANITARY CONFERENCE.

THE closing session of the International Sanitary Conference at Paris was held on April 4th, and an international convention was signed by all the delegates, those from the United States and Great Britain making reservations in regard to a few details.

The measures deal with three aspects of the cholera question, and are reported to be minute in their requirements. The first series provides for a thorough inspection and control over the embarkment of all pilgrims from Indian ports for Mecca, and for proper medical service on all vessels carrying pilgrims. The second series provides for the reorganization of the Turkish lazarettos on the Red Sea. The quarantine of pilgrim ships from India, formerly varied from two to seven weeks, whether the vessel had a clean bill of health or not. By the terms of the new convention a ship with a clean bill of health will be delayed only long enough for medical inspection, and contaminated or suspected vessels will not be detained in quarantine more than five days. The third series relates to precautionary measures in the matter of the return of pilgrims from Mecca by the lazaretto of Tor in Arabia Petrea, on the east shore of the Gulf of Suez. The conference has earnestly urged the Turkish Government to reorganize its sanitary administration thoroughly, with the view of preventing the introduction of cholera into Europe by land. With what result?

THE TREATMENT OF CHRONIC RINGWORM OF THE SCALP.

IN the Dermatological Section of the British Medical Association, held at Newcastle-on-Tyne, August 2, 1893, the above subject was introduced by Dr. Calcott Fox, and discussed by various members. Dr. Fox, in considering the parasiticide treatment, asked whether it was possible to make strong parasiticides penetrate the hair follicle and to bring them into contact with the diseased root and thus to destroy the parasite, as has been denied by Besnier. He was not wholly prepared to accept the latter's view, but yet regarded purely parasiticide treatment as a slow means of cure. Irritative treatment was commended as effective, but would be more advisable if the desired amount of irritation could be produced at will. He also recommends shaving. Treatment by croton oil in obstinate cases had yielded the speaker brilliant results, but it should always be kept in the hands of the physician.

Some of the speakers who followed favored the use of strong irritants and croton oil, others did not. Dr. Alder-Smith declared that in 90 out of every 100 cases that he had really cured, he had had to employ some croton oil sooner or later, or had had to needle out some isolated stumps left after other remedies had failed. Dr. Radcliffe Crocker considered croton oil a valuable remedy, most useful in very disseminated cases, but one which must be very carefully employed. He recommended oleate of copper, and for older children, salicylic collodion. Dr. Brooke uses as a base a modified Lassar's paste, with kaolin substituted for oxide of zinc, so as to make the preparation more sticky; he adds to this sulphur or creolin as a parasiticide. He was doubtful as to the value of epilation, and considered the croton oil treatment admissible only when the patient could be seen daily by the physician. Dr.

Thin considered it necessary for the cure of ringworm to set up an inflammation about the hair follicle sufficient to kill the parasite; but this inflammation must be carefully controlled, as he had seen cases where large areas of permanent baldness had been produced by croton oil. He did not favor therefore the use of croton oil, except in very exceptional cases, and in very exceptional hands. He had found that ringworm hairs that had been soaked in croton oil for a week, still caused a growth of the fungus in cultivating media, and therefore its effect must be due to its irritating and not to its parasitocidal properties.

A FAMOUS COUNTRY OBSTETRICIAN TWO CENTURIES AGO.

In the second volume of the "Philadelphia Hospital Reports," recently published, Dr. Theophilus Parvin contributes a sketch of the work of Manquest de La Motte, a famous French obstetrician of the last half of the seventeenth century. Although he was educated in medicine at the Hôtel-Dieu in Paris, he returned to the small country town of Valognes in Picardy to practise. Leading the busy and arduous life of a country doctor, he gradually acquired fame as an obstetrician "by adding reading to practice, observations to reading, and reflections to observations."

In 1726, when he was seventy-one years old, he published his "*Traité des Accouchements*," making this modest claim for its merits: "I have waited a longer time to publish this work, hoping to make greater progress; but my advanced age has decided me to issue it as it is, fearing that unforeseen death may deprive me of the pleasure of giving some light to my successors, trusting that the Lord will reward, not living in a place in which fortune can fulfil the desires of those who sacrifice to this idol."

What was the variety of work done by this physician, who frequently rode twenty or thirty miles on horseback to attend a case of labor, is exemplified by the reports of over 400 cases, written in a most interesting and vivid manner. The following passages will meet the ready appreciation of the tired doctor of to-day:

"Mother and child saved, but I almost died; and I was so fatigued and exhausted I could not use my legs and arms for eight days. . . . I believe I would have died when this accouchement, in which I had exhausted my knowledge and my strength, ended. I could scarcely breathe, and it was necessary to put me upon a mattress in front of the fire and to rub me with warm cloths. . . ." Of the closing moments of a labor he says, "The child escaped from the vulva as readily as an eel slips through your hand." So great was his regard for the feelings of his patient in conducting a labor, that it was said that "he would not so much as see the patient's feet when her slippers were off."

He was a master in podalic version, which was his favorite and chief obstetrical operation; and he asserted that, in obstructed labors, "in any other presentation than that of the head, the Lord had given him the means of extracting living children if he were called in time." The forceps devised by Palfyn he had heard of, but condemned, as he said he did not see "how an instrument of steel or other material could be passed to the place where the head is arrested and

wedged, usually in the strait formed by the ischia, the sacrum and the pubis, so closely that a sound to evacuate the urine which has been retained for several days cannot be introduced, nor a canula for rectal injection, not even a myrtle leaf; how can such an instrument be applied and used to remove the infant from the peril to which the narrowing of the parts exposes it? . . . Its use would be as impossible as to pass a cable through a needle's eye."

He was one of the first to recognize the narrowed pelvis as a cause of dystochia. Throughout his book are related unusual and interesting cases; one woman dying of fright consequent on his attendance; one woman who had thirty-two children before she was forty-five, when she lost her husband. Patience and refraining from meddlesome midwifery were the chief characteristics of his work. His self-independence and practical opinions he recorded in these words:

"As I have lived at the extremity of a province surrounded on almost all sides by the sea, and have worked most frequently in the depth of a country without physicians or surgeons who could aid me by their counsels, I have been compelled to conduct my practice most frequently in seeking to aid nature and to calm the accidents of pregnancy and labor, so far as common-sense and my reflection have furnished the means, without too great subjection to authorities and making myself a slave to common usages, at least when I did not know the necessity for conforming to them in reference to the disease, the constitution of patients and other circumstances from which practical considerations can be drawn."

THE NECESSITY FOR A WELL-PAID MEDICAL PROFESSION.

In an address before the Southwest London Medical Society Mr. Thomas Bryant urged the importance of physicians being well paid for their services.¹ He said:

"Let us never forget that our patients' interests are those we should always primarily consider, and that in all our practical and scientific professional work the public good is its ultimate object; but at the same time let us bear in mind that in order to realize this leading purpose it is all important for the interests of the public, as well as for the due exercise and dignity of our profession, that every practitioner of medicine should hold a perfectly independent but responsible position, and that in his professional work he should be left perfectly free from lay control, although amenable to lay censure. It is also equally necessary that he should be adequately paid for his professional services by all classes according to their means. Under these circumstances all measures, whether under the guise of charity or called 'provident,' and all hospitals, general, special, or private, which encourage the public to seek professional advice for little or nothing, are to be discouraged as helping to pauperize and degrade the public at large; and all members of our profession who induce or tempt the public so to do by means of private hospitals, competing private dispensaries, touting clubs and associations, or who are ready to accept at a reduced figure, over the heads of their neighbors, appointments which have been put up by laymen, as it were, to auction or competition, adopt the surest means with-

¹ *Lancet*, February 10, 1894.

in their power to lower the position of their profession in the estimation of the public, and at the same time do injustice to the profession and public by not giving to the latter the best services the former can supply, whilst they must, in addition, lose their own self-respect, even if they happen to gain cash by their unworthy actions. For let me ask, How is it possible for a man who is ill-paid or overworked, or both, either to give, in the interests of the public, the professional attention it is essential for him to bestow on every case he has undertaken to attend; or to maintain, in the interests of the profession, the position to which he is entitled and his own self-respect? We all know that any measure which encourages, either in a profession or trade, underpay and overwork, leads to bad work. In our profession such deficiencies are no less harmful—nay, they are more so, as its issues to the public are either life or death, health or ill-health, and to the profession either a position of pleasure, honor and respect, or one of degradation and unrequited labor."

CROTALUS HORRIDUS.

THE following description of the initial steps in the securing and preparing of the "mother tincture of *Crotalus Horridus*" receives the sanction of two homœopathic medical journals. A box of twenty-four large rattlesnakes was received by a museum proprietor in Rochester. Having provided a long hempencord, a bottle of ammonia and some whiskey, "to be prepared for an emergency," the owner, known as "Rattlesnake Pete," unfastened the lid of the box and, as a large snake darted out, seized it by the neck and carried it to a table, while the long lithe body coiled round his arm and the rattles were "singing away like grasshoppers."

Now comes the interesting part of the performance. A piece of common window-glass was placed near the snake's open mouth, and the rattler struck his wicked-looking fangs, which were nearly an inch in length, against the glass, a thin stream of yellowish looking liquid spurting upon it at each stroke. "Oh, he's full of it," said Pete. "There's poison enough right there to kill twenty men." While he spoke he walked toward the den, and giving the snake a quick twist, released him. The poison on the glass was absorbed with sugar of milk, scraped into a bottle and carefully sealed. The poison thus obtained is sent to certain London homœopathic physicians, who use it in their practice as a medicine for diphtheria and other diseases of a similar nature. The poison is supposed to be very valuable. The process just described was repeated with snake after snake, until all in the box were transferred to the den. After the first three or four were taken out, Pete plunged his hand among the mass of wrigglers with seeming impunity, dragging out his next victim with a quick but certain motion. "These fellows will give up their poison more readily to-morrow; they are a little sluggish on account of having been kept in such close quarters for the past forty-eight hours," said Pete, in response to the writer's query.

"Besides selling the poison, which I have told you about," added Pete, "when a snake dies, I try-out the fat of the reptile, and obtain from one and a half to two ounces of a very penetrating oil, from a fair-sized snake. This oil is worth eight dollars per ounce, and is used as a specific for deafness."

METEOROLOGICAL RECORD.

For the week ending March 31, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'thr. *		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S. 25	29.89	42	52	33	84	88	86	S.	N.W.	10	15	O.	O.	0.01
M. 26	29.90	32	37	29	56	53	56	N.W.	W.	12	15	O.	O.	0.02
T. 27	30.25	28	32	20	39	45	42	W.	W.	16	19	C.	C.	
W. 28	30.47	30	40	21	44	40	42	W.	S.W.	15	11	C.	C.	
T. 29	30.03	38	40	33	78	100	89	S.	W.	12	4	O.	N.	0.20
F. 30	30.00	38	47	31	65	41	53	W.	W.	12	4	O.	C.	0.02
S. 31	30.01	46	67	36	63	64		W.	S.W.	7	15	F.	O.	
☾	30.08		43	29			60							0.26

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☾—Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 31, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal Diseases.	Diphtheria and croup.	Scarlet fever.	
New York	1,891,366	521	354	16.32	16.76	1.68	8.40	1.56	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	455	140	13.64	12.10	1.10	7.26	1.88	
Brooklyn	978,394	340	123	18.86	14.79	.87	6.70	2.61	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	212	71	9.40	25.88	.47	5.17	1.41	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	—	—	—	—	—	—	—	
Cincinnati	305,000	106	32	4.70	15.04	—	2.82	—	
Cleveland	200,000	101	41	15.54	10.89	.59	1.98	—	4.06
Pittsburg	263,749	89	35	15.58	16.80	3.36	—	—	4.48
Milwaukee	250,000	75	40	11.97	20.00	2.66	7.32	—	1.33
Nashville	87,764	31	10	22.61	12.92	3.23	6.16	—	3.23
Charleston	65,165	24	6	—	12.48	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—	—
Worcester	96,217	25	9	4.00	20.00	—	20.00	—	—
Fall River	87,411	—	—	—	—	—	—	—	—
Lowell	87,191	32	4	9.89	18.78	—	—	—	—
Cambridge	77,100	31	13	22.61	12.92	3.23	6.46	—	3.23
Lynn	62,666	9	7	—	88.33	—	—	—	—
Springfield	48,084	12	3	8.33	8.33	—	—	—	—
Lawrence	48,365	8	2	28.00	50.00	25.00	—	—	—
New Bedford	45,866	18	5	15.38	15.38	—	—	—	—
Holyoke	41,278	—	—	—	—	—	—	—	—
Salem	32,283	11	2	9.09	—	9.09	—	—	—
Brookton	32,140	17	4	—	11.66	—	—	—	—
Haverhill	31,396	10	6	10.00	40.00	—	—	—	—
Chester	30,264	—	—	—	—	—	—	—	—
Malden	29,394	10	2	10.00	20.00	—	—	—	—
Newton	27,666	11	5	—	27.27	—	—	—	—
Fitchburg	27,146	—	—	—	—	—	—	—	—
Taunton	26,972	8	2	12.50	12.50	—	—	—	—
Gloucester	26,688	—	—	—	—	—	—	—	—
Waltham	22,008	7	5	—	—	—	—	—	—
Quincy	19,642	—	—	—	—	—	—	—	—
Pittsfield	18,802	2	0	50.00	—	—	—	—	—
Everett	16,565	—	—	—	—	—	—	—	—
Northampton	16,331	2	1	—	50.00	—	—	—	—
Newburyport	14,073	—	—	—	—	—	—	—	—
Amesbury	10,920	5	0	—	60.00	—	—	—	—

Deaths reported 2,502: under five years of age 936; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 369, acute lung diseases 416, consumption 239, diphtheria and croup 157, scarlet fever 52, measles 37, diarrhoeal diseases 36, whooping-cough 26, typhoid fever 21, erysipelas 15, small-pox 8.

From measles New York 24, Brooklyn 7, Philadelphia and Milwaukee 2 each, Cleveland and Pittsburg 1 each. From whooping-cough New York 7, Brooklyn 6, Philadelphia 4, Cambridge 3, Cleveland and Pittsburg 2 each, Somerville 1. From typhoid fever Philadelphia 5, Boston and Pittsburg 3 each, New York, Cincinnati, Cleveland and Lowell 2 each, Springfield and Malden 1 each. From erysipelas New York 6, Brooklyn 5, Boston, Cleveland, Pittsburg and Pittsfield 1 each. From small-pox New York 4, Brooklyn 3, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,488,442, for the week ending March 24th, the death-rate was 19.8. Deaths reported 3,979: acute diseases of the respiratory organs (London) 347, measles 162, whooping-cough 123, diphtheria 84, scarlet fever 39, fever 38, diarrhoea 25, small-pox (Birmingham and Oldham 5 each, London 1) 11.

The death-rates ranged from 10.6 in Derby to 26.1 in Salford; Birmingham 21.0, Bradford 17.5, Cardiff 18.2, Hull 16.2, Leeds 18.9, Leicester 19.8, Liverpool 23.0, London 20.3, Manchester 23.8, Newcastle-on-Tyne 20.1, Nottingham 18.0, Portsmouth 13.1, Sheffield 17.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 31, 1894, TO APRIL 6, 1894.

CAPTAIN EDWARD C. CARTER, assistant surgeon, will proceed at once to Fort Spokane, Washington, and report to the commanding officer for temporary duty.

Leave of absence for twenty-one days, to take effect on or about April 14, 1894, is granted MAJOR CHARLES L. HEIZMANN, surgeon, U. S. A.

The following named officers are detailed to represent the Medical Department of the Army as delegates to the Association of Military Surgeons of the United States, to meet in Washington, May 1, 1894: LIEUT.-COL. WILLIAM H. FORWOOD, deputy surgeon-general; MAJOR ROBERT M. O'REILLY, MAJOR JOSEPH K. CORSON and MAJOR WALTER REED, surgeons; CAPTAIN JOHN L. PHILLIPS, CAPTAIN G. L. EDIE, assistant surgeons.

FIRST-LIEUT. HENRY D. SNYDER, assistant surgeon, is relieved from duty at Fort Reno, Oklahoma Territory, and ordered to Fort DuChesne, Utah, for duty at post, relieving CAPTAIN SAMUEL Q. ROBINSON, assistant surgeon.

CAPTAIN ROBINSON, on being relieved by FIRST-LIEUT. SNYDER, will report in person to the commanding officer, Davids Island, New York, for duty at that post.

MAJOR PETER J. A. CLEARY, surgeon, will be relieved from duty at Fort McPherson, Georgia, by the commanding officer of that post, on the receipt by him of this order, and will report in person to the commanding officer, Fort Custer, Montana, for duty at that post.

FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, will proceed without delay to Camp Merritt, Montana, and report to the commanding officer, for temporary duty at that post.

FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon, having reported at Hdqrs. Dept. Dakota, is assigned to temporary duty at St. Paul, Minn., and will report to the medical director of the department for instructions.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, April 18th, at 8 o'clock.

Dr. E. G. Cutler will report "Two Unusual Cases of Malaria, one of Remittent Fever followed by Death, the other Successfully Treated." Dr. W. T. Councilman will show pathological specimens and Dr. A. P. Chadbourne will report on "The Clinical Use of Malacine."

F. C. SHATTUCK, M.D., *Chairman*.
HENRY JACKSON, M.D., *Secretary*.

AMERICAN MEDICAL ASSOCIATION.

SAN FRANCISCO MEETING.

The Committee of Arrangements for Transportation report that after strenuous endeavors to secure for members of the Association a round-trip ticket to San Francisco for the cost of a single full fare, they have so far succeeded that about one-half of the railroads have favored the committee's petition. These are chiefly the lines west of the Missouri, from which points thirty-day tickets can be had over various lines for but little more than a single fare. If arrangements can be made with Eastern railroads, over which there is more local travel, the entire journey can be made for a very low price.

The Committee desire a concerted effort of the members in the East to secure such reduction over lines east of the Missouri River.

AN EXCURSION TRAIN FROM CHICAGO.

Dr. Liston H. Montgomery, of Chicago, announces that arrangements have been made for a special train to leave Chicago on Tuesday, May 29th, at 10.30 P. M., arriving at Omaha, Wednesday noon, and Denver on Thursday morning at 7.30 of the 31st. Stop overs will be granted to visit any of the sanitary

or pleasure resorts throughout Colorado. At Denver there will be opportunity for a side excursion to any of the sanitariums or to Silver Plume over the Georgetown loop. From Denver the route is via Cheyenne, Ogden and Salt Lake City, where a stop over will be made to visit the Lake and Garfield Beach. From Utah the route is over the Southern Pacific and the train is due at San Francisco. The return will be made by the Shasta route.

BOOKS AND PAMPHLETS RECEIVED.

Report of Board of Health, City of Seattle, Fiscal Year Ending December 31, 1893.

Twenty-sixth Annual Report of the New York Orthopaedic Dispensary and Hospital, 1893-94.

Sixteenth Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, Md. 1893.

Annual Reports of the Managers and Officers of the New Jersey State Hospital for the Year Ending October 31, 1893.

The Application of Graphics to the Fetal Heart Sounds. By Hugh Hamilton, M.Sc., M.D., Harrisburg, Pa. Reprint. 1893.

The Tannate of Mercury in the Treatment of Syphilis. Gangrene of the Scrotum. By Charles W. Allen, M.D. Reprints. 1892-94.

Tariff Bill 1894 — H. R. 4,864, as It Passed the House of Representatives, February 1, 1894. Washington: Government Printing Office. 1894.

The Proceedings of the Third Annual Meeting of the Association of Military Surgeons of the United States, held at Chicago, Ill., August 8, 9, 10, 1893.

Burdett's Hospital and Charities Annual, 1894. Edited by Henry C. Burdett. London: The Scientific Press. New York: C. Scribner & Sons. 1894.

Longevity, with a List of Persons Known to have Lived One Hundred Years or More. By Archer Atkinson, M.D., of Baltimore, Md. Reprint. 1894.

Germania, a Monthly Magazine for the Study of the German Language and Literature. Vol. V. 1893. A. W. and E. Spanhoff, Editors, Manchester, N. H.

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Original Articles.

FLAT-FOOT.¹

BY E. H. BRADFORD, M.D.

If both feet of a standing person are placed side by side, they, with the two hollows which constitute the arch, form a circle, the outer sides of the feet forming weight-bearing rims. If one of the feet is removed and the whole weight is thrown upon the other, it will be seen that the semicircular rim, or the portion which touches the floor, becomes wider as the whole weight of the body is thrown upon the limb. This is due to the fact that the centre of the axis of the leg falls to the inner side of the weight-bearing portion of the sole; when one leg carries the weight, the ankle sags to the inside slightly, and the portion of the foot which touches the floor is correspondingly widened. This increase in the width of the contact portion of the sole is accomplished chiefly by the eversion of the foot in front of the medio-tarsal articulation and is checked by the tibiales muscles and the ligaments. If these muscles are weakened, the eversion of the foot will increase if weight is thrown upon it, the check becoming the ligaments which bind the scaphoid and metatarsals to the os calcis and astragalus.

If for any reason the muscles which hold the normal position of the foot are weakened, whenever the superincumbent weight becomes too great for the muscles to bear, the strain falls upon the ligaments, and this in time causes pain and tenderness. This pain and tenderness varies in severity, also in location. In some instances it is felt on the inner side of the foot in the region of the scaphoid, often at the head of the astragalus; sometimes the pain is referred to the outer side of the foot beneath the external malleolus. In some instances it is felt at the insertion of the plantar fascia to the os calcis, and sometimes a contracted band in the sole of the foot, similar in all probability to the fibrous cords to be felt in Dupuytren's contraction.

An examination of a dissected foot will show that the so-called arch of the foot is in reality two arches, an outer and an inner, united to each other firmly by ligaments, the outer arch being much lower than the inner. The outer arch consists of a truss composed of the five metatarsals, the cuboid and the os calcis; weight falling upon this passes through the astragalus, which sits upon the end of the os calcis. What may be termed the key-stone of this arch is the os cuboid, which articulates with the head of the astragalus slightly in front of the centre of pressure transmitted through the middle of the astragalus.

In the inner arch of the foot, the bow consists also of the curve of bone from the head of the first metatarsal and the os calcis, but the key-stone is slightly anterior to that of its outer arch, and is the scaphoid, which articulates with the astragalus on one side and the cuneiform on the other. There is also a transverse arch of the foot which, as has been pointed out by Dr. Goldthwait, is of some importance clinically. When weight is thrown upon the foot, the foot and leg can be compared to a leg with two claws, the weight not falling directly over either, but passing through the astragalus, which sits side-saddle, as it were, over the end of the os calcis. When the weight of the body is

thrown upon both feet, but little sagging is noticed. When the weight is borne upon one foot, either the body is inclined to the outer side so as to bring the centre of gravity directly over the outer arch, or the foot falls to the inside and the base is broadened, the inner arch descending and a movement of the inside taking place at the medio-tarsal articulation. This sagging inward consists of the dropping of the front of the astragalus with the scaphoid, that is, the so-called plantar flexion of the astragalus occurs. There is also a slight amount of inward movement of the heads of the astragalus and os calcis. This motion of sagging would continue until the heads of the astragalus and the os calcis rested upon the ground, with complete eversion of the foot if it were not that this is checked by ligaments and by the tibiales muscles.

Flat-foot is developed not only by the weakening of these muscles, as by a gradual stretching of the ligament. Individuals stand in what Annandale has called the attitude of rest. In this attitude, if the muscles are weak and not in action, the foot may be turned outward, and a greater amount of strain comes upon the ligaments which are not relieved by the tension of strong muscles. After a while the ligaments stretch, and the exciting cause remaining the same, a deformity is produced by alteration in the shape of the bones. It is probable, also, that faulty attitudes, positions with the foot turned out, are brought about, not only by occupation, but also by imperfect shoeing.

If a number of people be watched where they can be seen walking towards the observer from a distance, it will be noticed that peculiarities of gait are quite marked, that at least four per cent. will be seen to toe-out badly; that an equal number will toe-in with one foot; a smaller percentage will toe-in slightly with both feet; a large number will be seen to walk straight, that is, without eversion of the feet; a number will be seen to turn one foot out and the other foot in; the majority of children will be noticed to walk with the feet straight. The percentage of persons walking with the feet out is larger among women than among men, probably on account of the imperfection of shoes worn by women.

Anything which may weaken the muscular strength of the legs, or the muscles which are attached to the feet, will indirectly influence the causation of flat-foot. An increase of the superincumbent weight beyond the muscular strength may directly cause flat-foot. Rapidly growing children frequently show everted and flattened feet. Athletes who lift unusual loads in feats of strength develop flat-foot. In neither of these instances, however, is pain usually observed, provided the strain upon the ligaments is not too great. If, however, the weight of a rapidly growing child increases out of proportion to the muscular strength, or if the muscular strength of the athlete is weakened in his legs, strain comes upon the ligaments and pain develops. Certain occupations develop flat-foot, especially those which necessitate continued standing upon the feet. Flat-foot is characteristic of waiters, and is frequently seen in hospital nurses. An important indirect cause of the development of flat-foot is imperfect shoeing, particularly the lacing of boots tightly around the ankle and some distance up the leg.

DIAGNOSIS.

Although there is no difficulty whatever in the recognition of flat-foot in its pronounced stage, yet in the

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 7, 1894.

earlier stages, especially in children, it is not infrequently overlooked. A careful examination is therefore important, as not infrequently cases of flat-foot are not recognized, but also other affections of the foot are considered and treated as flat-foot. The following means will enable the physician to avoid mistake:

If a sheet of white paper is blackened over the flame of a piece of burning camphor, a sooty surface is furnished on the sheet of paper. If the patient be directed to stand with the bared foot upon this smoked sheet of paper, and the foot quickly removed without disturbing the paper, an exact imprint of the foot will be seen. In the normal foot not only is there a hollow extending two-thirds of the width of the foot and fully one-third of the length, but the line on the outer side of the foot should be straight or slightly convex with the convexity outward. When there is eversion of the foot this outer edge of the foot becomes slightly concave with the concavity outwards. Where in addition to this the scaphoid and the metatarsals come more in contact with the ground, the hollow of the foot will be diminished in size; in extreme cases it may be entirely lost.

It is important to recognize the amount of eversion of the foot and to what extent that is to be seen. This can be determined by examining the patient from behind, placing the child erect upon a table and drawing a line down the middle of the leg as far as the level of the malleoli, and then from the heel upwards along the middle of the line of the tendo-Achilles. In the normal foot these two lines should make nearly a straight line; if there is eversion of the foot, or rather, if the os calcis is thrown out of place, falling inwards, these lines form a noticeable angle. Eversion of the foot can also be recognized by marking a line along the middle of the front of the leg, and also along the middle of the foot. These in normal limbs should form one and the same straight line; if there is eversion of the foot, they form an angle.

It is also important to determine, for the purposes of comparison, the height of the hollow portion of the foot, that is, the distance of the scaphoid from the ground, both when the weight is applied upon the foot, and also when no weight is so applied. This can be readily done by measurements by means of a small caliper. It will be readily seen that the amount of inward sag when weight is thrown upon one limb varies with different people. It exists to a slight extent in all persons normally. The amount of inward sag is, of course, proportionate to the amount of eversion, and it is desirable to determine this, and also to note its increase or diminution.

To recapitulate then, the examination of the foot should consist first, of a sole imprint; second, in a determination of the amount of eversion; third, the recognition of the depth of the hollow of the foot, and next, of the amount of inward and downward sag of the inner malleolus or inner surface of the scaphoid when weight is thrown upon the foot. It is also advisable to determine the amount of motion at the mediotarsal joint. In severe cases of flat-foot no inversion is possible, and the foot is rigidly held everted.

PROGNOSIS.

In growing children, flat-foot not infrequently corrects itself. In many instances after flat foot has developed, no pain is caused and no acute symptoms, or the reason that the muscles are sufficiently strong to

prevent exaggerated strain falling upon the ligaments although the bones are displaced. Ordinarily, however, the affection is one which tends to become aggravated and to increase, developing disturbances of the foot in old age which cause much discomfort. Malformation in the shape of the bones is also observed, particularly in the head of the astragalus and os calcis. Disarrangement in the length of the ligaments following faulty position also takes place.

TREATMENT.

The treatment of this affection necessarily varies according to the severity. In the lightest cases in children no treatment is necessary beyond the furnishing of proper shoes, and gymnastic exercises to develop the tibiales and muscles of the feet.

As is well known, the shoe should be made with a sole which is straight on the inside. In cases with tendency towards flat-foot, the sole should be made not simply straight on the inner edge but with the inner edge forming a curve with the concavity inwards; all tight lacing of the boots around and above the ankle should be avoided. Gymnastic exercises of the feet and legs are advisable together with massage. In cases of children with pain in the feet and ankles, or where an increase of the deformity and osseous change is to be dreaded, support on the arch of the foot is needed. This is also true in adolescents, and in cases in adults, where, as it is usually termed, the arch of the foot is breaking down.

From the before-mentioned facts it would appear that the cause of the development of flat-foot is the inability of the arches of the foot to sustain the superincumbent weight without yielding more than is normal. This yielding is manifested by a dropping of the heads of the os calcis and astragalus downward and inward. If this is not checked a sensitiveness and strain of the ligaments must follow. An examination of the foot will show that, to prevent this sinking downward and inward, support must be given to the foot, to prevent this descent of the os calcis and astragalus. It is manifest that if a support is placed under the hollow of the foot existing when no weight is thrown upon the foot, and this support sufficiently strong, it will prevent any sinking down and in, when weight is thrown upon the foot. Where the foot is not flexible and is fixed in a position of eversion and such support is supplied, the normal flexibility and position of the foot must be regained.

The treatment of flat-foot consists, therefore, in the severer cases, first, of means to restore the normal position of the foot, and second, in means to prevent the abnormal sinking of the foot under the superincumbent weight. The first of these can be carried out ordinarily by correcting the position of the foot with the hand and applying of a plaster-of-Paris bandage. This bandage can be removed at the end of a week and a second one applied. Ordinarily in the course of three weeks, a sufficient flexibility of the foot will be attained to render further treatment by fixation unnecessary. Correction can, if necessary, be done under an anæsthetic; and in the severest cases osteotomy is rarely necessary.

The second stage of treatment, namely, the furnishing of proper supports to the feet is one requiring some little attention. The supports vary according to the shape of the arch of the foot. In the lighter cases, a leather sole-plate can be made to answer. This pad

can be made in the following way: a piece of dressed cow-hide is cut of a size sufficient to extend under the sole and up the inner side as high as the scaphoid. It is moistened and placed in the shoe, and the leather adapts itself in a measure to the shape of the foot. This is trimmed, dried, and the edges smoothed off. A piece of steel, which is bent so as to arch somewhat more than the foot when the patient stands, fitting the inner arch of the foot when the foot is slightly everted and sustaining no weight, should reach from the front of the portion of the os calcis which strikes the floor to a short distance behind the head of the second metatarsal. It should have arms which extend transversely across the foot from the level of the scaphoid to beyond the proximal end of the fifth metatarsal. The leather-sole which is designed to protect the foot can be moistened at any desired part and molded upwards as may be desired to fit the steel, the steel truss can be riveted to this. When this is done, a strong support will be furnished which, properly made, will not be uncomfortable and can be placed in any shoe. The steel after it is fitted should be spring-tempered and should be sufficiently strong as to bend but slightly under superimposed weight. If necessary, a second strip can be riveted to reinforce the first.

It will be seen, however, that these plates are not as firm as what can be furnished by metal. Metal plates are more difficult to apply, but more lasting after they are thoroughly fitted. In order to understand the exact method of furnishing metal plates, it is necessary to call to mind the anatomical conditions of flat-foot. It will be seen that the heads of the os calcis and of the astragalus should be prevented from descending, that is to say, a pressure upward and slightly outward should be exerted under the inner arch. In order that this should not be painful, this pressure should fall where the bones are less prominent, and it will be found that this is slightly behind and below the scaphoid. As the transverse arch of the foot at this point slopes in a curved line downwards and outwards, it is manifest that the support should transversely have this same curve.

It must also be remembered that the so-called flat-foot is in reality an everted foot, and that whatever plate or support is worn, eversion of the front of the foot must be prevented. In lighter cases this is readily done by means of the ordinary shoe, which supports the foot in a measure laterally. In the severer cases, however, this will not be sufficient, and shoes are necessary so constructed that they force the foot in the position of eversion of the front part. A combination of a metal plate and these shoes will be needed in the severe cases of flat-foot. The metal plate, it is needless to say, should be made so as to press only where pressure is required and not where pressure causes pain. The shape of the plate necessarily depends upon the shape of the distorted foot, and the amount of flattening of the arch as well as the amount of eversion of the front of the foot. The plate is made from a cast of the foot. It can be made either of silicon bronze which can be polished, and will not tarnish, or of hard rolled aluminum plates, but the strongest and best plates are made of steel hammered upon an iron cast of the foot taken from the plaster cast. Care is necessary in taking the cast of the foot that it should be put as far as possible in a corrected position, otherwise the plates will not fit accurately. In some instances it is necessary that the plaster cast

be shaved so as to increase the pressure at a desired point; this is, however, a matter which a little experience will naturally suggest.

In the severest cases, however, something more than this is required, for the reason that no plate can be worn which exerts, in these cases, as much upward pressure as is desirable. A series of successively higher plates can be used, but the result can be more speedily obtained by the use, in addition to plates of moderate height, of the oblique made by raising the sole on the inner side of the boots by lifts which are shaved off to the inner side so that the outer edge is not raised at all. In an adult the thickness should be in severe cases as much as three-fourths to one inch on the inner side. When this is applied, the patient is obliged to walk on the outer edge of the foot and eversion is prevented. As the patient's symptoms improve, the strained ligaments become rested, the weakened muscles strengthened, this sole can be removed and a metal plate substituted.

The satisfactory treatment of flat-foot does not consist simply in furnishing a support to the arch of the foot, but in placing the foot in such a position that the superincumbent weight does not fall upon a widened surface of the hollow of the foot which eversion at the medio-tarsal articulation brings in contact with the ground, but upon the normal semicircle which the outer part of the sole constitutes, together with the ball of the foot and the heel.

HEMORRHAGE INTO THE PANCREAS AS A CAUSE OF SUDDEN DEATH.¹

WITH REPORT OF A CASE OF HEMORRHAGIC AND GANGRENOUS PANCREATITIS.

BY W. F. WHITNEY, M.D., BOSTON.

FROM its hidden position, the pancreas is, perhaps, the one vital organ which is most frequently overlooked at the post-mortem, and yet its lesions are so important that no autopsy is regarded as complete without a distinct mention of its condition. This is especially necessary in a legal examination, where a person in previously apparent good health is found dead. And in making an examination, it should be the invariable rule after inspecting the greater peritoneal cavity to separate the layer of omentum between the stomach and large intestine, and explore the lesser peritoneal cavity. At the posterior part of this cavity the pancreas should be seen, extending from the duodenum almost to the hilus of the spleen. It can readily be made out as a lobulated gland, the separate lobules of which stand out in slight relief against the fat tissue in which it lies imbedded; its more reddish-gray color also distinguishes it. Its shape is roughly like a hammer, the head being spread out along the duodenum, and the handle (or tail) stretching towards the spleen. Its length is about $7\frac{1}{2}$ inches, its breadth $1\frac{1}{2}$ inches, and its thickness $\frac{3}{4}$ of an inch. Its weight is $2\frac{3}{4}$ ounces. Its duct, which will admit a fine probe, opens with the common duct of the liver in the papilla, about six inches below the pylorus, in the duodenum. The mouth of this duct is slit-like, and is not easily found. In practice, a good way is to pass a probe down into the intestine through the gall-duct, which can always be easily found by its bile-stained wall;

¹ Read at a meeting of the Massachusetts Medico-Legal Society, February 7, 1894.

then to slit up the papilla for a little distance on this guide; and upon careful search, a little opening will be found about one-eighth to one-quarter of an inch from the tip through which the probe easily passes into the pancreatic duct. Occasionally the duct has a separate opening of its own into the intestine, and then it is more difficult to find. But pressure on the gland will often force out a drop of fluid on the intestine near the papilla, and thus its seat can be located. Examination of the duct should also always be made, as its occlusion or inflammation may be the cause of important changes in the gland itself.

After death the pancreas rapidly undergoes decomposition, and its cellular elements are frequently so altered that but little reliance is to be placed on the microscopic examination.

The pancreas is often the seat of cancer, and fatty degeneration is recorded, an increase of the connective tissue causing a cirrhosis of the organ; then, too, the duct is frequently tortuous and dilated, or the organ may be partly or wholly transformed into a cyst. All of these changes require time for their completion, and the physician has usually been called long before death, not always able, perhaps, to diagnose the exact condition, but, at any rate, convinced in his own mind that death, when it came, was from natural causes.

There have, however, been a series of cases reported, rare, it is true, where a person died suddenly after an illness of which the time had been fixed as varying from half an hour to twenty-four hours, and where the only lesion found was a greater or less hæmorrhage in and about the pancreas. Fitz, in his monograph on acute pancreatitis,² gives sixteen cases which he has collected. Since then (1888) only three or four cases have been reported, showing that the condition is one of the rarest that occurs.

From an examination of these cases, it appears that the pancreas is red, usually somewhat enlarged, and the outlines of the lobules mapped out by dark-red lines, for the hæmorrhage almost always follows the interlobular connective tissue, which can be seen microscopically to be infiltrated. The amount of blood poured out was, in the majority of cases, comparatively little, perhaps one or two ounces, not enough to be the direct cause of death. There are two or three exceptions to this, one recently published by Seitz, where over two quarts flowed out upon opening the abdomen, and the source of the hæmorrhage was from the region of the pancreas. And this is the only case on record in which the hæmorrhage is sufficient to account for death.

As to the cause of the hæmorrhage, we are as yet entirely in the dark, and also as to the reason of death. None of the theories advanced cover all the cases. One, that the flow of the blood over the cardiac axis causes compression of the great sympathetic ganglion and arrests the heart, does not seem to be borne out by the condition of that organ, which is found filled with blood. Another, that the hæmorrhage is due to disturbance of the central nervous system, similar to the hæmorrhages of the lung, meets with little support, as it was associated with this condition in only one case. To say that it is due to a trophic nerve disturbance is to confess our ignorance, as the physiologists have failed to demonstrate any trophic nerve other

than the vaso-motor nerve. And until this is done, their lesions can hardly be spoken about. The alcoholic habit has been marked in a number of the cases, but drunkards are not the only ones who have died in this way. Fat persons and lean ones have alike succumbed; the preponderance of the sex, however, is male, and usually past middle life.

What we know on the subject can be briefly summed up as follows: In rare instances, death has suddenly followed attacks of greater or less severity referred to the epigastric region. At the autopsy, a hæmorrhage of varying amount has been found in the pancreas and its vicinity as the only lesion.

This was the conclusion arrived at by Dr. F. W. Draper several years ago,² and, as far as I have been able to learn, nothing new has been added to it. His cases are the best single series that have ever been presented and give us more real knowledge than any others.

Although the above covers the entire subject of pancreatic hæmorrhage, I should like to trespass a few moments longer on your time and call attention to the subject of acute hæmorrhagic pancreatitis and its sequelæ, which have been so well worked out by Dr. Fitz in his monograph. I have seen a number of cases, and I have the specimen here of a case of this comparatively rare lesion of which I made the autopsy last week. In hæmorrhage into the pancreas the extravasation is the only lesion found. There are no evidences of an inflammatory condition in the organ, no cellular infiltration. In acute hæmorrhagic pancreatitis, in which the symptoms are of longer duration, from twenty-four hours to two or three weeks, usually, however, terminating within the first week, we do find alterations in the organ which point to an inflammatory condition. The organ, as a rule, is enlarged. There are single or multiple hæmorrhages throughout its substance, but they are not recent. The blood is not fresh; it has already been changed and very often it can only be made out from its coloring matter and not from the presence of any of the red corpuscles. With these there may be more recent hæmorrhages, and a greater or less infiltration of the connective tissue with round cells—evidences of an inflammatory condition of the organ. With this is also almost invariably associated a condition which is called fat necrosis. Throughout the fat tissue, especially in the neighborhood of the pancreas, in its interlobular fat tissue, in the root of the mesentery, at times in the omentum, and (in one case reported, all the fat tissues of the body were involved) are found opaque, white areas, quite distinct from the ordinary tissue. The presence of this necrosis has given rise to a theory, advanced first by Balzer, that it is the primary condition, and the hæmorrhagic pancreatitis is the secondary one. He considers that the changes in the fat tissue are due to disturbance in nutrition in fat people (and it should be mentioned that these cases of acute hæmorrhagic pancreatitis are very frequently associated with an overproduction of fat) in whom the fat has gradually undergone degeneration, has eroded the vessels in their neighborhood, and in this way the hæmorrhage has occurred. Fitz, on the other hand, regards the areas of fat necrosis as due to the action of pancreatic juice or some of its products on the fat tissue itself. Fitz's theory has this point in its favor, that in the greater number of cases the necrosis seems to start first in the

¹ Fitz, R. H.: *Acute Pancreatitis*. Cupples and Hurd, Boston, 1889.

² *Trans. Assoc. American Physicians*, vol. 1 (1886), page 243.

neighborhood of the pancreas, where it is always the most extensive, and when it is found in moderate degree it is in that region alone. This would point to its being a local condition, and one referable to the pancreas rather than part of a general condition. On the other hand, such a case as Formad's, where the fat necroses were found throughout the entire fat substance of the body, does point to some cause, central in origin, which causes its destruction in these small necrotic areas. It is possible that some ferment of the pancreas may be absorbed into the blood, and in this way, of course, receive a general distribution. For the present, we have to consider each of these as a possibility. There is no question about the association of these fat necroses with hæmorrhagic pancreatitis. For the causal relation, we shall have to have more light on the subject from the careful observation of future cases, and now that attention has been attracted to it on both sides of the water, it will undoubtedly be found.

In the specimen I have just passed about, we find that the hæmorrhagic pancreatitis is largely of the organ as a whole; the size is rather increased if anything, but there is no question that it is the pancreas that we have to do with. On the other hand, there is a series of cases (I made the autopsy in one last week), in which, apparently after one of these attacks of pancreatitis, the pancreas became entirely necrosed, remaining simply a slough. It lies almost as a foreign body in the place where the pancreas had been, and if it were not for the knowledge of what might occur, we should have difficulty in recognizing that it was the pancreas. The notes of this case, which occurred in the practice of Dr. Bush, have kindly been given me by him, and are as follows:

"The case is that of a widow, aged thirty-three, whose family history is good, with the exception of father, who died of cancer of the rectum.

"December 18, 1893. The history obtained was that for a year and a half she had eaten very little food, having had a very small appetite, and had kept up with stimulants. She would not eat regularly; in fact, the sight of food or the odor of cooking produced nausea. Yet at times she would help herself to sardines, cold chicken and such cold lunches as she could pick up from the cold closet or the refrigerator.

"When I saw her she was suffering from an attack of vomiting, accompanied by urticaria, which was very troublesome. The wheals were all over her body. The legs were somewhat swollen about the ankles. There was insomnia. The tongue had a light brown coat, and there was constipation. These symptoms, with the exception of the inability to sleep, rapidly disappeared upon treatment.

"There were no renal complications and no pain. There was a great deal of lassitude. Under appropriate treatment, these features disappeared to a marked degree, and she was able to take nourishment, the quantity of stimulants taken being diminished, and with the exception of not being able to sleep, she was feeling better than she had been for two years.

"January 14th, she was up and about the house as usual, and in the afternoon was taken with severe pain in the left hypochondriac region. The pain was so severe that it required large doses of morphine, given subcutaneously, to quiet it. At one time two grains of morphine were given within forty-five minutes, the pain being so acute. There was emesis and abdominal

extension. There was pain on deep pressure over the above region, and the bowels were constipated. The abdominal pain and vomiting lasted four days, accompanied with marked tympanites; at the end of that interval there were a few movements of the bowels. The general pain seemed to subside, but there was always pain upon pressure from the left back through to the front. The temperature was taken twice a day regularly, and sometimes oftener, but was never found to be higher than 101.8°. The rate of the pulse averaged 90. She was able to take a certain amount of milk in small quantities, and there was no vomiting for eight days, at which time she obtained some whiskey, of which she drank considerable, and the pain, distention and vomiting recurred. The matter ejected was of a green color, something like crème de menthe, and was mixed with mucus. The stools were extremely fetid in character. There were no urinary symptoms. Death occurred February 1, 1894."

At the autopsy, the abdomen alone was examined. Upon opening it, there was no evidence of any general peritonitis; the whole lower portions of the bowels were perfectly smooth and free, but on looking at the upper part the stomach appeared to be very much distended, and was greenish in color. On puncture, there at once came up a yellowish, thin pus, by estimate two quarts, and, exploring further, it was found not to come from the stomach, but from the lesser omental cavity. Then I suspected it was a case of pancreatic disease. The specimen was removed entire, and afterwards dissected. The stomach and duodenum were opened, and nothing of marked importance found. A probe was passed through the gall-duct, and by this guide the opening of the pancreatic duct was found, which is a little whitish track running about one-half an inch and then opening freely, with a slightly jagged edge, looking as if eaten off, into the cavity of the lesser peritoneum. In this lies a sphacelated mass, all that remains of the pancreas. A little portion of pancreatic tissue is still adherent to the intestine, and the black discoloration is evidence of the hæmorrhage which had taken place at some time into that organ. The pus had burrowed into the root of the mesentery on both sides, but had not broken through into the general peritoneal cavity.

On looking at the case, there is no question that the grave symptoms are of only two weeks' duration; that this extensive destruction of the pancreas could have occurred within that time, seems almost incredible. But we have reason to think that is probably the case. It is possible and even probable that the earlier attack in December was one of acute hæmorrhagic pancreatitis, and the condition continued until the necrosis of the organ began at the time concurrent with the second attack (January 14th), when the pus began to form and the peritoneal cavity to be distended. So this gangrenous pancreatitis is to be looked upon as the result of the hæmorrhagic pancreatitis.

There is still one other form of inflammation of the pancreas associated with the formation of the pus within the organ, which is spoken of as suppurative pancreatitis, and in which the disease is usually of long duration. It is a question, perhaps, of months—some deaths, however, occurring within the first month. But, as a rule, it has a longer course than acute hæmorrhagic pancreatitis. It is very rarely associated with any evidence of bleeding into the organ itself, and only rarely with any evidence of fat necrosis.

THE LEACH CASE.¹

BY THOMAS M. DURELL, M.D., OF SOMERVILLE.

On the evening of April 26, 1891, about six o'clock, I was called to the house of Dr. H. M. Leach, in Somerville, by the doctor, who told me that a servant-girl at his house had been taken with a fit. He said that he had used ordinary restoratives and that they had failed. I went with the doctor to the house and upstairs into a back room. At the head of the stairs we were met by Mrs. Leach, wife of the doctor, who said, "The girl is dead, she died while you were away." Dr. Leach then told me a most plausible story, which was corroborated by his wife, of the girl's previous ill health—that she had had a severe attack of the grippé, was a sufferer from chronic lung-trouble, and was subject to attacks of fainting.

I examined the heart, and found that it had ceased to beat. I also examined the pupils, and in so doing noticed that the nose was very cold.

The whole story was apparently so straight—and there was really no cause for suspicion, except a very remarkable degree of excitement on the part of the doctor and his wife—that I told them that I would sign the certificate, and went away.

Later in the evening, the relatives of the girl called upon me, and told me an entirely different story about her sickness and death. According to their account, the girl had been well up to within two weeks of her death, and they had known nothing about her sickness except what had been told them by the Leach family. They said that the family had told them that Mary was sick, and that the doctor had given her ether to extract a tooth, but that no one of her friends had been allowed to see her before her death.

While this was going on, the undertaker came and said that the bed-clothes and the girl's clothing was saturated with blood.

With these statements I deemed a further examination necessary; and on the following morning I made an autopsy in the presence of Drs. W. D. Swan and John F. Couch.

Autopsy.—Mary Murphy, twenty-two years old. About seventeen hours after death. Rigor mortis present. Dependent parts of the body bluish-purple color. Bloody froth exuding from mouth and nose. Right side of neck swollen. Pupils moderately and equally dilated. Abdomen prominent. Breasts small and flat; areolæ slightly marked; whitish-yellow fluid exuded from nipples on pressure. There was a quantity of gas in the peritoneal cavity. The parietal peritoneum was opaque and gray. The blood-vessels were injected, and covered over with yellow, flocculent masses. The omentum was dark and friable, glued to the intestines; loops of the intestines were matted and glued together. There was considerable grayish, turbid fluid in the pelvic cavity. The lungs were normal. The heart was empty; its right side was flabby; there was a firm mixed clot in the right side; otherwise it was normal. Spleen soft. Kidneys normal. Liver soft; there was a circumscribed patch on the external aspect of the right lobe, corresponding to a spot on abdominal parietes, covered with sloughing yellowish material.

On raising the uterus an irregular shaped hole was observed in its posterior surface. Immediately behind

this, lying transversely in the pelvic cavity, was a laminaria or sea-tangle tent. This tent was about the size of the thumb; one end of it was irregular in shape and corresponded exactly in shape to a hole which was seen in the walls of the uterus. The vagina was of a dirty slate color, and at the posterior commissure was an abrasion through the mucous membrane, the result of violence. The os uteri was patulous and was lacerated by many radiating fissures (the result of violent dilatation). The uterus was three and three-eighths inches in breadth at the fundus and four and one-half inches in depth. The internal surface was covered with decomposing material; and near the fundus were portions of placental tissue, also decomposed. The tubes were normal. The left ovary was normal; the right contained a corpus luteum in the state of a cyst of about the size of a cherry. The hole in the uterine wall was plainly to be seen on the inner surface, and extended directly through the substance of the organ. The bladder contained a small quantity of bloody urine; the organ was normal. The brain was normal.

The death was due to septic peritonitis, the result of an abortion.

The case has been tried twice; and both times the jury have returned a verdict of "Guilty." The first verdict was set aside on exceptions, and the exceptions on the second case are now pending.

Some very interesting questions were raised at these trials. The most important of these was the denial of the pregnancy by the defence, and the attempt to show that the material found in the uterine cavity was the result of a membranous dysmenorrhœa. A disease which Dr. Thomas says that he *thinks* he has recognized five times in his whole life, and of which Dr. Davenport, in his very valuable book on "Diseases of Women," doubts the existence; and yet a disease with which the men and women who testified for the defence, were very familiar; one young homœopathic man having had fifty or a hundred cases of it in a town in Maine of about six thousand souls. This claim was readily set aside; yet I am convinced that in another such case I should have a microscopic examination made by an expert.

Another question was as to whether a girl, pregnant for the first time, advanced three or four months in pregnancy could introduce a sea-tangle tent into her own uterus. This was strongly denied by the government; and yet a man of good standing in Boston came onto the stand for the defence and swore that from statements made to him by other women, he considered it not only possible, but probable, that this could have been done.

Another of the questions was as to the method in which the tent got into the pelvic cavity. My own theory was, that the tent was put in, and after a time an attempt was made to withdraw it, and in so doing the string was pulled out (the string was gone, the end of the tent split, and there were marks of forceps-teeth or something of that kind on the same end); that then the operator became frightened and made a desperate effort to get the tent with the forceps, and that in his efforts he pushed the tent through the already softened uterine wall. This theory was supported by the direction of the wound, that is, in the axis of the outlet. The defence claimed that the girl put it in herself, and that it worked its way up into the cavity (?) of the uterus and then ulcerated its way through. If this were

¹ Read before the Massachusetts Medical-Legal Society, February 7, 1894.

possible, the direction of the hole would have been just opposite to what it was.

The case was most obstinately fought by all the forces which money could provide, with able counsel and all sorts of so-called medical testimony; and yet a verdict was secured in both cases.

NOTE.— Since writing the above the Supreme Court has overruled the exceptions in the second case, and the prisoner has been sentenced to seven years' hard labor in the State Prison.

T. M. D.

Clinical Department.

TWO CASES OF LITHOLAPAXY.¹

BY GARDNER W. ALLEN, M.D.,

Surgeon in the Genito-Urinary Department, Boston Dispensary.

THE following cases seemed to present some points of interest, and may, perhaps, be considered worth reporting.

CASE I. A. S., fifty-seven years old, has been under my treatment for chronic cystitis and stricture at intervals for about four years. Micturition has been abnormally frequent and more or less difficult for many years, requiring occasionally the use of a catheter. In February, 1893, I advised internal urethrotomy, as the stricture, which admitted a No. 24 sound with difficulty, was not only a source of irritation, but interfered with catheterization. This proposition was declined by the patient, and a little later he purchased a catheter at a price which seemed to him a bargain. The first time he used it, it broke off in the urethra. After many futile attempts at removal he was seen by Dr. Burrell, who the next day did perineal section and removed that portion lying in the urethra, an inch or more being still left in the bladder. Not being prepared for cystotomy, Dr. Burrell desisted from further attempts at removal, and urged the patient to go at once to the hospital, which he declined to do. After this he suffered considerable and steadily increasing discomfort until July 16th, when I found him in great distress. Micturition was very frequent and difficult, and accompanied by an amount of suffering which was painful to witness. The passage of a sound immediately disclosed the presence of stone. The patient refused to go to the hospital, and as I was obliged to be away for several days I was unable to arrange for an operation until July 25th. On that day I did litholapaxy with the assistance of Dr. W. E. Chenery and two sons of the patient. The possibility of being obliged to cut for the stone suggested itself, and I also rather expected to begin with an internal urethrotomy; but as the lithotrite and No. 23 tube would pass, though with difficulty, it was decided not to complicate the operation. The patient took ether very badly, and it was impossible to get him thoroughly anesthetized. His constant writhing and the difficulty of breaking up the stone with its rubber nucleus sufficiently to pass through the small evacuating tube caused considerable delay, so that it was two hours and a half before the bladder seemed clear. The detritus removed consisted of fragments of phosphatic material mixed with pieces and bits of red rubber and, when dry, weighed 124 grains.

The patient was much relieved by the operation, although, of course, he still had his cystitis, considerably aggravated by the experiences of the last few months.

He passed fragments of stone and bits of catheter at intervals, and an attempt to pump out the bladder without ether about two weeks after the operation was unsuccessful on account of pain. Internal urethrotomy was done August 31st, and the calibre of the urethra brought up to 34. After recovery from this, the searcher still seeming to show fragments in the bladder, the patient was etherized September 28th and the bladder pumped out through a No. 31 tube. Only a small amount of sand was brought away, — no fragments. After this, repeated examinations with the searcher failed to reveal any foreign body, and for a while the patient's condition seemed much improved. But the cystitis gradually grew worse, in spite of treatment, until marked relief was afforded by injections of iodiform.

CASE II. The patient was a Syrian, twenty-eight years old, totally ignorant of the English language, and apparently of rather less than average intelligence. Through an interpreter it was made out with some difficulty and vagueness that when ten years old he was supposed to have a stone in the bladder and that an American surgeon in Beyrout wished to do lithotomy, but the parents would not consent. After that he had no symptoms until about a year ago, when he began to have frequent and difficult micturition gradually getting worse until he was obliged to urinate every fifteen or twenty minutes, with great pain. When he came to the dispensary, August 15, 1893, he was having a mild chill and complained of abdominal pain. The temperature taken a few hours later was normal. The urine was loaded with pus and was very foul, filling the room with a fetid odor. Examination with the searcher showed stone in the bladder.

The next day the patient was seen at his home. He complained more of abdominal pain, most severe in the left inguinal region. Examination of the abdomen was negative; the abdominal walls were retracted and hard, and not especially sensitive to pressure. No great importance was attached at the time to this abdominal pain, which was supposed to be of a colicky nature. The temperature was now 101°, the pulse rapid and rather weak, and the tongue dry. There was evidently constitutional disturbance, which was attributed to septic absorption from the bladder; and it was thought best to remove the stone and wash out the bladder at once.

The operation of litholapaxy was done under ether, with the assistance of Dr. R. F. Chase and ten or a dozen Syrians, friends and relatives of the patient. After the first crushing there was some difficulty in removing the lithotrite, and there was then first noticed a bright red tumor, the size of a large orange, behind the scrotum. It was rather a startling discovery, but was soon made out to be a prolapsed rectum. It was easily reduced through the very patulous anus, but immediately reappeared every time the patient strained in the least, which was very often. One of the assistants was detailed to hold it constantly up, but it prolapsed as often as his attention was distracted by anything of interest in the proceedings, and it proved quite an annoying complication, delaying the operation considerably. The interior of the stone was very hard and was crushed with difficulty. The operation was rather long, but the patient stood it well. The bladder was washed out with a boric-acid solution.

The stone was apparently about the size of an English walnut, and consisted of superficial layers of phos-

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 7, 1894.

phatic deposit with a hard, dark-brown nucleus as large as a hazel-nut, presumably uric acid. A good deal was lost during the operation; the remainder, when dried, weighed 138 grains.

The next morning the pulse was fair, temperature normal, and tongue coated but moist. The character of the urine was improved, and micturition was less frequent and painful. The patient complained less of abdominal pain. In the afternoon there was recurrence of abdominal pain accompanied with hiccough. The abdominal walls were still retracted and the pain continued most severe on the left side. The patient vomited once and had no appetite. Temperature normal. The bladder was irrigated with boric-acid solution.

The second day after the operation, August 18th, the abdominal pain had increased. There was great sensitiveness to the touch, and tympanites had developed during the night. There had been no more vomiting. The tongue was moist. The temperature was normal; the pulse very rapid and weak. The urine had become foul again, but there was no difficulty with micturition. The bladder was washed out as before. The patient failed rapidly during the day and died at 8 P. M.

Looking back at this case after it was all over, it seemed evident that there had been from the beginning a grave and probably necessarily fatal abdominal complication which was not appreciated, partly on account of the difficulty of communicating with him and partly because the urinary symptoms not only overshadowed all others but appeared to account satisfactorily for his general condition. That the state of the bladder had at least a share in the causation would seem to be indicated by the apparent temporary improvement after the operation.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY R. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

ETHER AND CHLOROFORM IN ANÆSTHESIA.

KÖRTE¹ has read an interesting communication on this subject, in which he shows the tendency to substitute ether for chloroform. The statistics, as presented before the Association of German Surgeons, were: 133,122 cases of chloroform anæsthesia, with 46 deaths, or 1 death for 2,894 cases. According to the statistics of Kappeler, 53 deaths occurred in 152,260 cases, or 1 in 2,878.

He gives a subcutaneous injection of morphia before anæsthesia. In using ether, as much as from 30 to 50 grammes (1 to 1½ fluid ounces) should be poured on the apparatus at first, but once tolerance is established, the amount required is small. The patient should be allowed to make several deep inspirations at the beginning of etherization. At the end of one minute, the mixture of gas in the apparatus becomes constant, consisting of 2.8 to 4.7 per cent. of ether, 16.6 to 18.7 per cent. of oxygen, and 1.2 to 1.7 per cent. of carbonic acid; in other words, less than a tenth part of the carbonic acid necessary to exert an injurious influence. Tolerance is established somewhat more slowly with ether than with chloroform, requiring seven and a half minutes. Since Dr. Körte has used ether he has anæ-

sthetized 600 patients, each operation requiring from 100 to 200 grammes (3.25 to 6.5 fluid ounces) of ether, according as the operation lasts one-half to one hour. All the patients bore the anæsthetic well. There was no slowing or weakening of the pulse, blood-pressure being sometimes even elevated.

However, there is a special action on respiration, the bronchial secretion increasing under ether, a rhoncus being at first produced, which would necessitate the suspension of chloroform anæsthesia, but which has no significance when ether is used. Vomiting was observed only sixty times in the 300 cases. The period of excitement is longer, but the sleep is calmer. In 32 cases only were the patients restless, exhibiting signs of discomfort. In one case, complete narcosis could not be obtained, though 430 grammes (14 fluid ounces) of ether were used. In three cases tetanic muscular contraction rendered the operation more difficult. In such cases about 20 drops of chloroform placed on the mask will cause the cessation of the contractions. After anæsthesia, the awakening is pleasant, and is soon succeeded by a natural sleep, due probably to the preliminary injection of morphia. It has been stated that ether produces nephritis; and in order to test the truth of this assertion, Dr. Körte examined the urine in a series of cases, before and after narcosis. Of these, 203 had no albuminuria either before or after operation. In seven patients there was albuminuria before etherization, but the nephritis from which it originated was in no way modified. Albuminuria was observed after anæsthesia in only six cases previously free from it. The influence of ether upon bronchial inflammation is incontestable, although it cannot be said that pneumonia is more frequent after ether narcosis. Recent bronchitis, however, should be considered a contraindication. Ether was given to patients suffering from empyema, in whom chloroform would have been dangerous on account of the heart. In such cases, nevertheless, the ether should be at once suspended as soon as a large quantity of fluid is observable in the bronchi.

As regards the inflammatory nature of ether, this is but a minor inconvenience, requiring only the simple precaution of avoiding the use of the Pacquelin cautery about the face, mouth, nose, etc. Patients who have submitted to both ether and chloroform, state that the sensations of anæsthesia by the former are more disagreeable, but the awakening is less painful. The writer's experience confirms this.

COCAINE IN HÆMOPHILIA.

Von Manteuffel² (Dorpat) reports the successful treatment of a severe case of prolonged bleeding following the extraction of a molar tooth of a boy aged twelve years. After two days of unsuccessful treatment by various devices and drugs it was determined to use a Pacquelin cautery. A preliminary injection of cocaine at three places in the gum about the site of the extracted tooth caused the bleeding to immediately stop. The injection had to be repeated, however, at intervals of five or six hours for some time before the bleeding was permanently controlled.

ON THE INDICATIONS TO BE DRAWN FROM THE URINE AS TO THE SAFETY OF ANÆSTHETICS.

At a meeting of the Clinical Society of the New York Post-Graduate Medical School, Dr. W. H. Por-

¹ Deutsche Med. Zeitung, February 12, 1894; The Universal Medical Journal, March, 1894.

² Deutsch. Med. Woch., 1893, No. 28.

ter² presented a paper on anæsthetics and the indications as to their safety, presented by the state of the urinary excretion. The paper is worthy of careful consideration, and he draws the following practical deductions from this chemico-physiological analysis of chemical phenomena :

(1) That ether and chloroform act upon the same principles, but with results developed by slightly different methods.

(2) That both are capable of producing death at the time of the anæsthesia; chloroform more frequently than ether.

(3) That ether causes as many, if not more, deaths than chloroform, but the fatal issue is delayed until the patient has been removed from the operating-table.

(4) That by a careful study of the density of the urine and its causes, we are in possession of exact information by which we can determine the precise nutritive condition of the system, and be forewarned as to the possible outcome of the anæsthesia. It also enables us to judge which anæsthetic is best adapted to the individual case in question.

(5) We are taught that neither ether nor chloroform should be administered until the glandular organs, in their necessarily damaged states, are put in the best possible condition to endure this extra strain. When this is a general rule, many cases that now prove fatal will be saved.

(6) It teaches that every public institution should have a paid physician who is competent to examine the urine, and determine through it the status of the physiological economy before giving the anæsthetic. It should also be the duty of this same physician to administer the anæsthetic, for he alone knows best which anæsthetic to select with a given condition of the system, and is also better able to guide the patient safely through the anæsthesia than one who knows nothing of the constitution of the patient except from a second party.

(7) While it is clear that death in some instances is directly due to the primary effects of the ether and chloroform, and in others to secondary effects, it should not deter us from using them, but stimulate us to be more thorough masters of their actions upon the system, and thus to guard against their ill-effects. When all this is accomplished, chloroform will probably hold the first place as an anæsthetic.

OPERATIVE PROCEEDINGS IN ADVANCED AGE.

Gibson⁴ has presented an interesting paper on this subject, having collected 65 cases, all aged seventy or more, with a mortality of 16; and of these, eight deaths were due to uræmia, the death occurring, on an average, on the fifteenth day. There is an absence of shock as the cause of death, and the use of iodoform is to be avoided in advanced age.

THE SURGICAL TREATMENT OF PULMONARY CAVITIES.

N. P. Dandridge,⁵ in a paper presented to the New York State Medical Association, presented this subject, and arrives at the following conclusions :

(1) A certain number of lung cavities can be successfully dealt with by incision and drainage.

(2) Tubercular cavities in the lower portion of the lungs—if single and superficial, and the general condition of the patient permits—should always be

opened. Cavities at the apex should only be opened where free and persistent expectoration is present, and has resisted treatment, and the rest of the lung is not involved.

(3) Abscess, gangrene and hydatid cysts should be opened and drained whenever they can be located.

(4) Closure of the pleura should be present before evacuation of a cavity is attempted.

(5) In cases of pyo-pneumothorax the fistulous tract should be explored, and any cavity freely laid open by the canter.

(6) Cavities that have been opened are best treated by packing with gauze, preferably iodoform.

(7) The further careful trial of such agents as iodoform, chlorine gas and chloride of zinc is desirable to determine as to whether the tubercular infiltration may not be modified by them.

(8) It is very desirable, for the further extension of surgical interference in pulmonary cavities, that the means of locating such cavities and of determining their size, and the exact character of the tissues that overlies them, should be perfected by further study, and for the accomplishment of this the surgeon must look to the physician.

GASTROSTOMY IN ONE STAGE.

F. T. Paul⁶ has contributed an illustrated article, and recommends the following method of opening the stomach at one operation, with power to feed the patient at once :

"The proceeding is very simple. The preliminary stages of the operation are conducted as usual, but when the stomach is picked up, a portion of it is drawn out of the wound, and two running sutures of fairly stout silk are passed in a circle round the site of the intended opening, with their ends in opposite directions, care being taken not to include the mucous membrane. The opening is then made, and, each side of it being grasped with artery forceps, one of my small (3-8 in.) intestinal glass drainage-tubes is inserted, and the ligatures are drawn tight and tied. The exposed portion of the stomach is now washed and returned into the abdomen, the external wound drawn together with fishing-gut sutures, and the ends of the stomach ligatures tied over two glass rods crossing the wound, in order that the stomach may be kept in close contact with the peritoneal surface of the abdominal wall. The wound is then powdered with iodoform, dressed with cyanide gauze and salicylic wool, and a bandage applied, a piece of jaconet being placed outside over the dressings to preserve them from becoming soiled. The experience of many bowel cases has shown me that these tubes separate between the third and seventh days; therefore, from the moment of the completion of the operation to the third day, the administration of food or washing out the stomach may be carried on with impunity. On the morning of the third day, the wound should be dressed, and from this time until the tube separates, and it is clear that good adhesions have been formed, discretion should be exercised as to the amount of food given and the care with which it is administered."

ENTERO-ANASTOMOSIS FOR MALIGNANT STENOSIS OF THE DIGESTIVE TRACT.

F. H. Markoe⁷ has contributed an interesting paper upon this subject, exhibiting two patients upon whom

² The Post-Graduate, July, 1893; Annals of Surgery, October, 1893.

⁴ Annals of Surgery, vol. xviii, No. 4, October, 1893.

⁵ Ibid., February, 1894.

⁶ Lancet, December 23, 1893.

⁷ Annals of Surgery, February, 1894.

he had operated for symptoms due to malignant stricture of the digestive canal. He summarizes as follows:

As a result of experience, we endeavor to operate as early in the disease as possible, or if debility is already present, postpone interference until, by means of systematic lavage with careful gastric, supplemented by rectal nourishment, the general condition improves. We have also learned:

- (1) That the size of the anastomotic opening must be huge on account of the tendency to contraction.
- (2) That in case of the stomach it should be as near as possible to the greater curvature and nearer the fundus than the pylorus, so as to be not only as far distant as possible from the disease, but at the same time, in the most favorable situation for the passage of the contents of the stomach into the intestine.
- (3) That the jejunum, about thirty inches from the pylorus, is the proper portion of the intestine to approximate, and that its opening should be placed midway between mesenteric attachment and extreme convexity.
- (4) That in the approximation the loop must be so arranged that its peristaltic wave corresponds with that of the stomach.
- (5) That the tide of opinion seems to favor a union which shall represent, as far as possible, that of the different anatomical layers (the ideal operation), rather than through the medium of artificial aids (Wolfier, Halsted, Barker, Abbe).
- (6) That as in all intra-abdominal operations, our manipulations must be so performed as to favor the slightest degree of ultimate adhesions between adjacent structures.

NON-PARASITIC CYST OF THE LIVER.

A rare and interesting case was reported by Müller at the twenty-second German Surgical Congress.⁸ It was probably a cysto-adenoma of the biliary ducts in a woman aged fifty-nine. The tumor was quite large, of slow growth, and at the time of operation (ten years after the growth was first noticed by the patient) it filled the abdominal cavity and part of the pelvis. It was mistaken for an ovarian tumor. At operation the tumor was found to be a large cyst containing over six litres of a chocolate-colored fluid (hæmorrhage into the cyst), and was attached to the liver, which appeared normal, by a thick, hollow pedicle. The cyst wall was thick, bled profusely when cut, and was formed of the remains of hepatic tissue with cystic dilated biliary ducts. The tumor was benign, that is, non-recurrent. The patient was free from recurrence at the end of one and one-half years.

SPHINCTERPLASTY AFTER EXTIRPATION OF THE RECTUM.

Willems, of Gent,⁹ in order to avoid the distressing rectal incontinence occasionally seen after extirpation operations, has attempted to form a muscular sphincter by following and modifying the suggestion of v. Hacker for gastrostomy and colostomy. He has successfully demonstrated his plan on the cadaver, but not on the living subject. It consists in bringing the resected end of the rectum out through a slit in the fibres of the gluteus muscles, near its origin from the border of the sacrum, and suturing it to the skin. This slit he would make two centimetres long and parallel with the muscular fibres.

⁸ *Beilage z. Centbl. f. Chir.*, 1893, Bd. xx, 66.

⁹ *Centbl. f. Chir.*, 1893, Bd. xx, 401.

This was reported in April, 1893. In March, Gersuney operated in Vienna by a method which was intended to overcome the same difficulty, namely, rectal incontinence.¹⁰ He solved the problem by twisting the proximal end of the resected rectum on its long axis till its lumen was sufficiently closed. This was determined by the introduction of the finger during the torsion. When this was accomplished the end was sutured to the skin. Gersuney operated on two patients suffering from rectal carcinoma. The sphincter ani was destroyed, but the rectal stump could be brought down to the skin. Both cases rapidly recovered without the sutures giving way. One had no incontinence from the first. The other at first was unable to control liquid dejections, but later (at the end of eleven weeks) recovered perfect control over the contents of the rectum.

These two procedures seem to offer a means of overcoming this painful and disagreeable sequel which has deterred many from operating on these patients, and they deserve consideration. They can be combined, perhaps, to advantage in some cases, since the Gersuney method is applicable to those cases where the excised end can be united to the skin in the usual way. The Gersuney method can also be used in forming an artificial anus where the intestine is resected so as to leave a free end.

INTESTINAL RESECTION.

Haasler reports a successful resection¹¹ where it was necessary to remove fifteen centimetres of the ileum with its mesentery, the ileo-cæcal valve, cæcum, vermiform appendix, ascending colon, hepatic flexure, and one-half of the transverse colon with the attached mesentery. The disease was an adeno-carcinoma which involved all the above tissues with the mesenteric lymph and retroperitoneal glands. The patient was well one year after the operation.

SUTURE OF WOUNDS OF THE LIVER.

At the recent Surgical Congress in Rome, Micheli¹² showed a case in which he had successfully sutured a wound of the liver. Laparotomy having been performed, it was found that the wound was situated on the convex surface of the left lobe, near the free margin; it was four centimetres in length and two in depth, and was directed vertically towards the lower margin of the organ. A moderate amount of hæmorrhage had taken place. The edges of the wound in the liver substance were brought together with five silk sutures and the abdomen closed. The patient (a woman) made an uninterrupted recovery and was discharged cured in twenty days. In a case of gun-shot wound of the liver, the author applied fifteen silk sutures and the hæmorrhage was so thoroughly controlled that no trace of bleeding having taken place could be found four days after the operation, when death occurred from peritoneal sepsis.

THE TREATMENT OF EXUDATIVE TUBERCULOUS PERITONITIS BY MEANS OF INTRA-PERITONEAL INJECTIONS OF STERILIZED AIR.

Nolen¹³ has arrived at the conclusion, after a number of observations, that curative results can be ob-

¹⁰ *Centbl. f. Chir.*, 1893, Bd. xx, 553.

¹¹ *Centbl. f. Chir.*, 1893, Bd. xx, 64.

¹² *Ref. Med.*, November 7th; *British Medical Journal*, December 2, 1893.

¹³ *Berl. klin. Woch.*, 1893, No. 34, p. 513.

tained by injecting sterilized air into the peritoneal cavity through the opening made for the evacuation of the ascitic fluid. He has tried this method in three cases successfully. In two cases the cure was permanent; in the third, the patient was too much exhausted prior to the treatment to have recovered.

The method is as follows: Sterilized air, contained in a glass jar, is expelled by means of hydrostatic pressure and passed through sterilized cotton, then through warm, sterile water, and finally passed, by means of the puncture needle, into the peritoneal cavity. This is carried out until the abdomen is tense. The process is reversed by removing the hydrostatic pressure.

RESECTION OF THE KIDNEY.

Kümmel has reported his experience in this method.¹⁴ After successful experimentation on animals, from which more or less of the renal parenchyma had been removed without detriment to their general condition or impairment of renal function, he operated on two patients. One was a woman forty-one years of age. The operation showed extensive suppuration, abscess formation and a renal calculus. About one-third of the kidney was excised. The patient was well at the end of three years after the operation. The other patient was a man fifty-four years old. Here a piece the size of a walnut was removed from the upper extremity of the right kidney. The remaining defect was closed by suture. He recovered from the operation in three weeks, but was not relieved. He was later found to have carcinoma of the bladder, which caused his death ten weeks later. The autopsy showed that the right kidney had perfectly healed, but was affected by interstitial nephritis. The excised portion of this kidney showed also the same process. In a third case, a woman aged thirty-four, an echinococcus cyst, the size of a hen's egg, was removed from the right kidney in a wedge-shaped section. The defect was closed by sutures. About one-half of the kidney was removed from the centre of its convex border without injuring the pelvis. The patient recovered. Other successful cases by Czerny, Bardenhauer, Socin and others, were reported by Kümmel.

Bloch (Copenhagen) has resected a small portion of a kidney which, on microscopic examination, showed bacterial infection. The operation was done for diagnostic purposes; and notwithstanding the infected condition the defect, which was closed by five or six cat-gut sutures, healed by first intention.

Küster has also removed an embolic infarction by resection from a patient aged thirty-two.

Kümmel recommends the convex border of the kidney as the most favorable site for resection, on account of the course of the renal vessels.

CHANGES AND DEGENERATIONS IN NÆVI.

Reboul¹⁵ states that in a certain number of cases the nævi disappear after birth. If any changes occur in them, or whenever they show signs of extension of malignant degeneration, they should be removed. They are most likely to undergo malignant degeneration of the melanotic variety. They should be regarded as infectious, and great care should be taken to prevent a local infection becoming general and leading to a fatal termination.

SURGICAL TREATMENT OF CERVICAL, THORACIC AND ABDOMINAL ANEURISMS.

C. B. Nancrede¹⁶ has presented the above subject to the Surgical Association, and submitted to them for their discussion the following propositions:

The Treatment of Cervical Aneurisms.

- (1) All methods should be supplemented by recumbency and diet.
- (2) Proximal compression, when feasible, should always be tried, and where the arterial coats are seriously diseased should supersede ligation.
- (3) "Needling" should supplement pressure when the case is progressing rapidly; possibly it is advisable in all cases suitable for compression, and is certainly to be employed where this method fails in cases with highly atheromatous vessels.
- (4) Proximal ligation, having been rendered much safer of late by the use of aseptic precautions, less absorbent ligatures and the avoidance of all injury to the arterial walls by employing the "stay-knot," is permissible when the arterial walls are relatively sound until experience decides whether or not "needling" is superior in its results.
- (5) Since recurrence after proximal ligation almost certainly results from non-deposition of white thrombi, and their maintenance in contact with the aneurismal wall from lack of proper changes in its lining, "needling" is then clearly indicated.
- (6) Where the location prevents proximal arrest of the blood current "needling" is the best operation; possibly distal compression—rarely feasible—might aid in the deposition of thrombi.
- (7) For the reasons already given, although occasionally successful, the indications for the permanent introduction of such foreign bodies as wire, horse-hair, etc., into aneurismal sacs are so much better met by "needling" that such procedures had better not be adopted.
- (8) The modern revival of the older method of extirpation of aneurisms should not be attempted for spontaneous cervical aneurisms.

The Treatment of Thoracic Aneurisms.

- (1) All methods should be aided by the employment of rest in bed and diet.
- (2) The permanent introduction of foreign substances should not be employed.
- (3) "Needling" should be tried, aided by distal compression, when feasible, during use of the needles; if this fails, distal ligation should be resorted to.
- (4) Distal interruption of the blood current by simultaneous ligation of the carotid and subclavian arteries may be tried.
- (5) "Needling" is indicated when complete or partial failure follows distal ligation.

The Treatment of Abdominal Aneurisms.

- (1) All methods should include recumbency and diet.
- (2) "Needling," when this can be done without injury to the hollow viscera, is the most promising plan.
- (3) Proximal or distal compression may be tried, with or without "needling," but to be effectual must be done under anæsthesia.
- (4) The permanent introduction of foreign bodies into the sac is inadvisable (see proposition No. 7, Carotid Aneurisms).

(To be continued.)

¹⁴ *Centbl. f. Chir.*, 1898, Bd. xx, p. 78.

¹⁵ *Arch. gén. de Méd.*; *British Medical Journal*, October 21, 1898.

¹⁶ *Annals of Surgery*, September, 1898.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SOUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, February 7, 1894,
DR. ABNER POST in the chair.

DR. G. W. ALLEN read a paper entitled,

TWO CASES OF LITHOLAPAXY.¹

DR. H. L. BURRELL: The patient that Dr. Allen has so successfully operated upon came under my care last March with a catheter lodged in his urethra at the junction of the membranous and bulbous portion. The patient showed us the portion of the catheter which was broken off, and which was one of those dangerous catheters sold by pharmacists, composed of rubber and sulphur, which become friable upon keeping.

He was advised to have a perineal section done and the catheter removed. This, however, he declined, and went home. I was induced, much against my will, to try to extract the catheter at his home per urethra. A portion of the catheter was removed by forceps, but it finally broke off, and undoubtedly a piece of the catheter slipped into his bladder and formed the nucleus of the stone which Dr. Allen has removed. The operation was completed by opening his perineum and washing out the bladder, with the vain hope that the fragment would be removed. He was told that it would be necessary to have a further operation performed in order to secure the lost end of the catheter that rested in his bladder. This he declined, and he is, of course, to be congratulated on the successful removal of the fragment and the calculus which has formed about it.

DR. WATSON: Dr. Allen's first case, that in which a bit of a red-rubber catheter formed the nucleus of the stone, suggests a matter in connection with the choice of operation for stone which is interesting, I think, and which I feel should receive rather more attention than it sometimes does. I refer to the method of removing stone after rapid fragmentation through the wound of an ordinary external perineal urethrotomy. This method, which dates back for a long period, has been advocated by Mr. Reginald Harrison, and still more recently by Surgeon Major Keith, under certain conditions, the most important one being obstructive prostatic hypertrophy of such nature as to make the passage of instruments from the meatus especially difficult; or again, where there is present some condition which makes the stone very difficult to crush, such as its having a foreign body for a nucleus, a soft substance, like that in Dr. Allen's case, or a bit of lead, for example, or in cases in which there is a large stone, the crushing of which by the ordinary means would require a long time. Under such conditions this very simple perineal operation recommends itself, and the surgeon should not hesitate to adopt it, even after having begun to do the usual crushing operation, whenever these conditions arise. The only death I have had thus far from operating for stone would, I think, very likely have been averted had I employed this method of operation. It was a case in which the prostatic urethra was exceedingly difficult to pass a lithotrite through without some injury, owing to the encroachment of an enlarged prostate, and I think the deep

urethra was slightly wounded, and that death was the result, probably, of the injury.

DR. POST: It is a little curious to me to see how nicely Dr. Allen succeeded in pulverizing that catheter. My own experience would lead me to think a catheter was an extremely difficult thing to pulverize with a lithotrite. Generally enough elasticity remains to make it difficult to break up into small enough fragments to remove through the ordinary apparatus.

DR. E. H. BRADFORD read a paper on

FLAT-FOOT.²

DR. HARRINGTON: For myself, I have always liked the metallic foot-plates better, for the reason that the other foot-plates, I think, are apt to give way. You often get relief from a new pair of well-fitting boots, but as they are worn and sag they get misshapen, and cease to give relief. I think the same trouble comes with plates which are not metal. The subject has been treated more from the anatomical point of view, and without much reference to symptoms. They who do not study flat-foot might expect all feet which need support to show deformity. We sometimes get the most painful feet with very little of what we would call flattening, very little that would show from tracing or measurement.

DR. FITZ, of Cambridge: In order to test the question of the occurrence of flat-feet, I have been making arrangements to get footprints of Indians, negroes and whites on a large scale, to see how far the occurrence is distributed. For that purpose, I have experimented somewhat as to a method for quickly taking large numbers of footprints, and have devised one which may be of interest to the Society. I have in mind getting the ratio between the length of the feet and the breadths of the ball of the foot, the arch and the heel, and summing this up for the different races, to see whether there is a distribution of flattening, and how it occurs in relation to age as well as to nationality, and especially to see if it occurs more or less frequently among those wearing an arch-supporting shoe.

DR. NEWELL: I have been very much interested in hearing Dr. Bradford's very interesting observations, and also to see the method of making the various impressions in the way just described by Dr. Fitz. I have been always very much opposed to the use of plates in any form for flat-foot. It seems to me these observations under the varying degrees of pressure show conclusively that the arch of the foot is an elastic movable apparatus that changes its height in accordance with the amount of weight you bear upon it. Although I have seen a good deal of flat-foot in the physically reduced cases, it seems to me the pain was due to abnormal tension, to weakening of the ligaments, and the condition has been one of wasting away of muscles or ligaments or both, and one which in almost all cases in my experience has shown marked improvement in improved physical conditions. I think there is no question that as a temporary means of relief a plate for flat-foot is useful except that it has the disadvantage that being placed under the foot it presents a very abnormal condition in the shape of a rigid, inflexible arch that keeps up a constant pressure atrophy, and patients who have come to me wearing flat-foot plates I have known to suffer a great deal from pressure atrophy; so that it seems that except as a measure of

¹ See page 323 of the Journal.

² See page 377 of the Journal.

temporary relief the use of plates of any kind is contraindicated.

DR. HARRINGTON: We use foot-plates a good deal as we use crutches; we do not use them after the patient can get along without them. Among the severe cases of flat-foot there are many cases in which it would be absolutely impossible to get relief without foot-plates. I believe most thoroughly in the proper position of the feet, proper methods of walking, etc. The danger from pressure is not great. If the pressure is improper we get callosities and we soon find it out from the patient. The foot-plate is only a temporary means of support. Many patients wear plates for a few months and then give them up entirely or use them only from time to time.

DR. GOLDTHWAIT: Very little remains to be said upon the subject of flat-foot, after Dr. Bradford's paper, as flat-foot is generally understood, that is, an obliteration of the longitudinal arch of the foot. Much less attention has been paid to the transverse arch which is an anatomical fact, and which at times becomes obliterated, and requires treatment of as definite a nature as in the cases in which the longitudinal arch alone is flattened. It is to this special point that I wish to confine my attention.

Normally, across the metatarso-phalangeal articulation is a slight arch which becomes obliterated as the weight is borne upon the foot, but which re-forms as soon as the weight is removed. In this way the weight is received upon the inner and outer sides of the foot. The normal tracing, or impression, of the foot has this sharp re-entering angle with this tongue running up under the ball of the foot. When the arch is obliterated this sharp angle is lost, and the weight is borne more upon the middle of the foot. This condition is almost invariably present in the cases of metatarsalgia, and the acute pain is at once relieved by the correction of the arch. A specially constructed metal plate or leather pad has been used in this condition.

DR. BRADFORD: I am glad Dr. Newell brought that point out, for I meant to have laid stress on the fact that it is important that patients with flat-foot should be treated with gymnastic exercises and massage. The treatment of flat-foot varies according to the severity. In the mildest cases shoes and gymnastics are all that is needed. In the less mild cases I think some slight means of throwing the foot over are needed and in these cases the soft plate is sufficient. In the severer cases, temporarily a strong support is important, and I am inclined to think we shall be able to get along very well with the leather strengthened by steel. The strong metal plate will probably be needed in the heavier cases. I do not quite agree with Dr. Newell that this necessarily causes pain. If adjusted right, I do not think pain is caused. Although, of course, there is danger of muscle atrophy during the use of a plate, the same may be said as to the application of any appliance, which is only to be used when this is unavoidable.

DR. NEWELL: I have been misunderstood if I made any one think I thought the plate caused pain. My experience has been that the plate relieves pain. What I referred to is pressure atrophy. I have seen patients who have worn rigid metal plates a long time and the muscles and soft parts have been very much atrophied from non-use and constant pressure over a rigid metallic arch. What I have always found best is correction of position and the use of flexible springy supports,

especially the leather ones. I once had a baby two years of age brought to me with a beautiful pair of aluminum bronze flat-foot plates in its shoes.

DR. O. K. NEWELL read a paper on

THE INTERMITTENT RAPID DILATATION OF URETHRAL STRICTURE.

The paper called attention to the generally admitted fact that all strictures which can be at once treated by the introduction of metallic sounds are best effected by gradual dilatation. That true organic urethral stricture, like œsophageal and rectal strictures, is incurable, and let alone tends with greater or less rapidity to recontraction. The paper then described a method of treating all very small calibre strictures where no progress with metallic sounds can be made, or where they have progressed to partial or complete retention. This method consisted in using a series of dilators similar in operation and construction to Dr. Newell's divulsor described some time ago. These dilating staffs range in size from No. 10 F. to No. 30 F., and their purpose is to do away with the old operation of immediate full divulsion by intermittent rapid dilatation, say first from Nos. 10 to 14 or 18, then from Nos. 18 to 20 or 24, and so on. All strictures are thus made practically amenable to gradual dilatation. No detention in bed is necessary, even where there is retention, and patients are able to avoid being incapacitated from work. Also when the dilating staffs are passed in on the guide, the danger of making false pockets, as with a free metallic sound in small calibre strictures is avoided and the operation is made mechanically certain. It being only a question of how much stretching to do at each sitting.

DR. WATSON: I should like to ask in how many cases Dr. Newell has tried this method.

DR. NEWELL: I have adopted it now during the last two and a half years. I have in that time treated no case of stricture in any other way. I suppose I have treated seventy to eighty cases in this way. I never yet have had any case that has not been able to keep at work. It is true, as Dr. Watson cites from Sir Henry Thompson's and his own experience, that slight disturbance of very small strictures often causes more trouble than radical interference. But by this method we do not interfere slightly, but moderately. Dilating, for instance, with retention, from the filiform up to Nos. 16 or 18 F. This relieves the retention, but is not violent enough to disable the patient, who may go about his work after the procedure.

DR. WATSON: Would you claim greater immunity from mortality when this method is used?

DR. NEWELL: I do not think there is any mortality from divulsion.

DR. WATSON: The reason I ask this question is to bring out one matter with which Dr. Newell's experience in this series of cases differs widely from that of some other surgeons; for example, from Sir Henry Thompson's, who states very clearly, what other surgeons have also held and what I find to be true in my own operations, namely, that frequently far greater constitutional disturbance and more serious symptoms arise (especially in cases of the tighter strictures) after an incomplete operation than you will have after a full divulsion or internal urethrotomy or dilatation, etc. If Dr. Newell can show in a large number of cases that that is not true, it will be of decided interest to me. When I first began to do rapid dilatations and internal

urethrotomies, I used to be a little afraid of carrying the operations to their full limits; but I found that the least constitutional disturbance occurred when I at once fully restored the calibre of the strictured portion of the urethra to its normal size, and the most serious followed upon partial restoration only.

I do not quite understand whether Dr. Newell classes this method which he describes as divulsion or dilatation; nor do I understand what Dr. Newell means when he says that the operation of internal urethrotomy is not applicable to structures of small calibre — for, of course, it is well known, that with the instrument of Maisonneuve any stricture through which a filiform bougie can be passed can readily be divided by an internal urethrotomy.

DR. DOUGLAS GRAHAM: These cases are entirely out of my line of practice. The method of Dr. Newell is evidently a sort of internal massage. Several years ago some foreign surgeons reported a number of cases of stricture of the urethra successfully treated by massage after the so-called failure of other means. As soon as a bougie could be passed through the stricture this made a good substratum over which to use massage from the outside. By this combined method of gradual dilatation from the inside, and massage externally, thickening, narrowing and spasm were got rid of. Where practicable it would certainly seem to be a rational and natural procedure. But the mere mention of massage in such regions is sufficient to incite in some minds the idea of immorality, as it probably reminds them of some indiscretion of their youth which must have been a very different thing from *massaging* a stricture. "Evil to him who evil thinks."

DR. NEWELL: Intermittent dilatation; no divulsion is done at all. This is not a divulsor. I think it has been the experience of surgeons in the last few years that when they sterilized things there was very little heard of the so-called catheter chill. When I have seen it, it has seemed to me to be of the reflex class.

Dr. Newell said in answer to questions that this method was applicable to strictures regardless of their situation. One had to go slowly with penile ones, and there was rapid progress with the others usually.

He was opposed to cutting a stricture under any form. One must have a pretty large stricture in order to cut it. The mere linear incision of a stricture only added a cicatrix to what was already a cicatrix.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

REGULAR Meeting, February 7, 1894, DR. Z. B. ADAMS, the President, in the chair.

DR. T. M. DURELL reported

THE LEACH ABORTION CASE.¹

DR. W. F. WHITNEY: In regard to the question of membranous dysmenorrhœa. If the examination of the membrane shows the presence of villi of the chorion, that is indubitable proof of the existence of a pregnancy, for these are only formed from the ovum; they can never be formed by the uterus itself or by any of the processes of menstruation. On the other hand, a membrane is not infrequently discharged from the uterus composed of cells of a character like those in the decidua of pregnancy, the uterus being one in

which, as far as can be learned, no pregnancy has taken place. I have made some observations of this kind myself, in which, from the structure of the membrane, I supposed pregnancy to have been present; but this diagnosis later events proved to be an error. The presence of villi of the chorion, which are formed alone from the ovum, and not by the uterus, is the only indubitable proof of pregnancy.

DR. W. A. DOLAN: I have had one case of abortion in which the opening was through the cul-de-sac into the peritoneal cavity, and death, as in this case, was due to septic peritonitis. I took the precaution to have the tissue of the uterus examined microscopically, so that if there had been any question of pregnancy we could have had that to fall back on.

DR. W. F. WHITNEY then presented a communication on

HÆMORRHAGE INTO THE PANCREAS AS A CAUSE OF SUDDEN DEATH.²

DR. J. G. PINKHAM: I am not able to throw any light on this subject. I am very much interested in the paper. I have witnessed autopsies in two cases. The first one was some years ago, before this subject was particularly understood, and the autopsy was made by one of my fellow practitioners. The case was not fully understood at that time, but as I remember it, the pancreas seemed to be simply a mass of blood-clot. The mass was as large, perhaps, as a man's arm. I judge now from thinking of the case that the hæmorrhage into the tissues was very extensive indeed, so that the organ was very much enlarged in this way, and was extremely brittle as we took it out. The case was sent to some one in Boston, but was not diagnosed as it would be at this time. It was supposed that the hæmorrhage was in the neighborhood of the pancreas, and that that organ was wasted, destroyed by disease, but I think now that the hæmorrhage was in the substance of the organ, and that that produced the peculiar condition that was observed.

In the second case I was the attending physician. The patient was a baker, a fat man. He was taken with violent epigastric pain, vomiting and great depression. He was treated, as those cases usually are, with remedies to meet the symptoms, and died after about five days. The autopsy showed the condition which has been described here, the opaque white spots which are not limited to the pancreas, but were visible in the omental fat, and very generally throughout the abdomen. I think other portions of the body were not examined because that was before the attention of the suburban practitioners, at any rate, had been called to this peculiar condition of acute pancreatitis with hæmorrhage. But that evidently was the disease, and that specimen was sent to Dr. Whitney, and upon his diagnosis the certificate of death was based. As a matter of interest, there was some dissatisfaction among the friends in regard to the fact that the man died from such a cause, and the case was reported to a distinguished homœopathic physician of Boston, who said there was no such disease.

DR. B. H. HARTWELL: I have never seen a case of what has been described by Dr. Whitney, but I think that we are under a great deal of obligation to him for bringing anew this matter to our minds. We see a great many cases of sudden death, and I am sure

¹ See page 382 of the Journal.

² See page 379 of the Journal.

we are puzzled sometimes after an autopsy to state the absolute cause of death. I am sure hereafter we shall not only look more carefully for disease of the pancreas in our autopsies, but shall be better able to tell whether the pancreas enters as a factor in the case, and if any of us should fail to find the pancreatic duct, I am sure there would be some consolation to us in the fact that so eminent a pathologist has difficulty in finding it.

DR. F. W. DRAPER: I am reluctant to say a word, because all the necessary words have been said either by Dr. Whitney or by the other members of the Society. Two practical points, however, have occurred to me in listening to what Dr. Whitney has said: one is that all sudden deaths by natural causes are not to be set down hastily as deaths by "heart disease"; and the other is that an autopsy is not a complete autopsy unless it includes the examination of the pancreas; that it is incumbent upon us as medical examiners to be thorough in our work, and where occasion comes to make an autopsy, to make it so that it can be worthy the name.

So far as these cases of pancreatic hæmorrhages are concerned in their relation to sudden death, I think the anatomical diagnosis is not at all a difficult one when the lesser omental cavity is opened as it always ought to be for inspection; the case declares itself almost at once; there is no reasonable room for doubt as to what one has before him. The organ itself, normally a pale yellowish white, is in these cases discolored red, and on either side and around the end of it will be found in the retro-peritoneal connective tissue an infiltration of blood that is unmistakable, which one cannot but see if he has ordinary eyes; so that it is not a matter of difficulty in diagnosis, but ordinarily a matter of neglect in the pathologist, that these cases escape observation. In some 4,000 cases of death of all sorts, I have seen 19 cases in which there was some pancreatic hæmorrhage, but in not all those nineteen was it to be assigned as the one cause of death. It was in company with other conditions, conditions relating to the liver or to the kidneys, or to the heart or to the lungs, which were complications, so to speak, making the post-mortem diagnosis a little more difficult; but in some nine or ten cases there was no other cause of death. Those were the purely typical illustrative cases Dr. Whitney has described so well. They are the cases of persons found dead, about whose clinical history one knew nothing. In only one instance that I recall at this time did I know the clinical side of the case, and that was, as it happened, the first case I ever came upon. That has been published. I will only state the facts that the symptoms were precisely as Dr. Pinkham has related—great depression, amounting almost to collapse, epigastric pain, with nausea and attempts to vomit, which generally were unsuccessful, a sinking which resulted in death in forty-five minutes after the onset of the attack. The patient, a man, died in the carriage on the way to the hospital, having been seized suddenly, and the appearances were typical and conclusive, nothing else being seen that was abnormal except this pancreatic hæmorrhage into and around the organ.

DR. Z. B. ADAMS: It seems to me that there are two very valuable points for the medical examiner in the study of this thing, and the first of these is that sudden death may occur from pancreatic hæmorrhage. It should be borne in mind, and when the medical

examiner is called to a case and cannot come to any positive conclusion about it, he should not be content unless he examined this organ after making the usual examination of the heart or other organs. He should not forget that sudden death may occur from hæmorrhage into the pancreas, something, I think, few of us have heretofore taken into account, but since attention was called to it we have waked up to that. Another point is in reference to the cause of death. That, as Dr. Whitney has said, is still a very obscure point; but it seems to me, if many of these cases should come into our hands, we should soon solve that problem. The cases are so rare, however, that we know little or nothing about that. Speaking of the other forms of pancreatitis, suppurative, etc., I am reminded that some fifteen years ago I had a very stout patient who died after a short illness. I secured an autopsy, and found pus at the head of the pancreas, but at that time I had heard nothing about this acute form of hæmorrhagic pancreatitis, and really did not know what to call it. I found quite a sac of pus there, and that, to me, appeared to be the only lesion. The symptoms were those of distressing pain in the epigastrium, with vomiting and inability to retain food, constipation, and that was all. He died within a very few days, greatly to my surprise, as I could see no sufficient reason for his death, and that was what I found. As soon as Dr. Fitz's paper came out I said, "There was my case."

DR. W. F. WHITNEY: In making a post-mortem examination, I should say the pancreas ought to be examined before the heart or any other viscera have been disturbed, because one is very apt to get a false extravasation, which might mislead as to the source of hæmorrhage. The rule should be, after the greater cavity of the peritoneum had been inspected, the lesser cavity should be opened and the pancreas examined at that time.

In reply to Dr. Adams's question, I would say that, personally, I have not seen any cases of sudden death from hæmorrhage into the pancreas from violence or a blow. There are some cases where violence in the neighborhood of the pancreas has been found to be followed by a hæmorrhage into the organ. Dr. Fitz has recorded the autopsy in the case of a man who had a railroad injury, and the splenic artery or artery of the pancreas had been torn; he found evidences of fat necrosis in the neighborhood of the pancreas; this had developed very speedily, and is one of the strongest arguments in support of his theory that the necroses are dependent upon lesions of the pancreas.

There are a number of cases reported of extensive injury of the pancreas in which patients have recovered without untoward symptoms.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED Meeting, held at the New York Academy of Medicine, Tuesday evening, March 6, 1894, DR. M. ALLEN STAER, President, in the chair.

DR. J. ARTHUR BOOTH presented

A CASE OF EXOPHTHALMIC GOITRE: THYROIDECTOMY.

The patient was a female, aged twenty-four, single. Family and personal histories negative. About two years ago the woman first noticed an enlargement of the throat, and three months later the eyes became affected. The patient is positive that there were no

heart symptoms until six months ago, when palpitation, throbbing of the vessels of the neck, shortness of breath and flushing of the face appeared. All these symptoms gradually increased in severity, and the patient became irritable, easily excited, anxious and unable to sleep because of the tumultuous action of the heart. When the woman first came under my observation both the eyes were very prominent, especially the left, and the lids did not follow the movements of the eyeballs (Graefe's symptom). The pupils were moderately dilated, reacting to light and accommodation. Fundus normal. Vision not impaired. The enlargement of the thyroid body was marked, the right lobe being the larger. Pulse 150, of high tension. Apex-beat of the heart diffused; no murmur. Respiration 24. No tremor of hands or fingers. Examination of urine negative. The patient was given daily applications of galvanism, and received one two-hundredth of a grain of aconitia twice daily, and fifteen grains of iodide of potash three times daily. She was also instructed to practise full inspiration frequently, and to rest as much as possible during the day. Under this treatment there was decided improvement in the symptoms, but only temporary in character, and on November 8, 1893, thyroidectomy was performed by Dr. B. F. Curtis at St. Luke's Hospital, the right lobe of the thyroid being removed. The patient made an uneventful recovery, and during the four months that have elapsed since the operation there has been a decided improvement in all her symptoms. The pulse-rate now ranges between 96 and 110. Many of her nervous symptoms have entirely disappeared. She sleeps well, does not suffer from palpitation, and is able to attend to her housework. The eyeballs are much less prominent. The left side of the thyroid has diminished in size to a slight extent since the operation.

DR. ROBERT SAFFORD NEWTON presented

A CASE OF EXOPHTHALMIC GOITRE: THYROIDECTOMY.

The patient was a girl aged twelve. In this case almost complete extirpation of the thyroid was performed, only a small supernumerary lobe being left. Since the operation, the exophthalmos, which was very pronounced, has almost entirely disappeared. Before the operation the pulse-rate was 180, and the child suffered from cyanosis. The systolic and diastolic heart-sounds were almost synchronous. The operation was performed by Dr. Fowler on October 21, 1893, and the child was out of bed three days afterwards. Her pulse now averages about 100. She is able to attend school, and is much improved in every way.

The PRESIDENT stated that the absolute contrast between the symptoms in exophthalmic goitre and myxœdema makes it seem very probable that many of the symptoms of the former disease are due to an excessive secretion of the thyroid gland, just as those in myxœdema are due to its suppression. Up to the present time there are not enough cases on record to permit us to make definite statements regarding it.

DR. GEORGE W. JACOBY presented

A CASE OF PROGRESSIVE MUSCULAR ATROPHY OF THE PERINEAL TYPE.

The case was that of an illegitimate child, a girl aged twelve years. The mother states that the child's father was a large, well-proportioned man, but that he

was rejected for military service abroad because his muscles were weak. This is the only hereditary factor obtainable. The history of the case, in brief, is as follows: There was no trouble at the child's birth. When two years of age, some months after an attack of measles, she complained of pain in the lower extremities, which was so severe that she could not stand. This lasted about six weeks, and from that time on she appeared to have difficulty in walking. She has always been able to move her legs in every direction. When she was four years old it was noticed that one leg was weaker and thinner than the other. About one year ago it was first noticed that there was an atrophy of the thigh on the side opposite to that of the affected leg. She holds the leg in a stiff and clumsy position. There is a lack of symmetry between the two buttocks. She had marked lordosis and slight lateral curvature. The muscles of both thighs are in a continual state of unrest, almost like fibrillary twitching. The right foot is in equino-varus position. There are no sensory disturbances. There is partial reaction of degeneration in the affected muscles. The arms are not affected. The superficial reflexes are normal. The tendon reflexes are present, but somewhat reduced on the affected side. In conclusion, Dr. Jacoby said that while he regarded the case as one of progressive muscular atrophy of the perineal type, it was not an absolutely typical one, inasmuch as the atrophy, although bilateral, is asymmetrical, one leg being affected and the opposite thigh.

DR. B. SACHS said he agreed with Dr. Jacoby's diagnosis. The atypical distribution of the atrophy should not militate against the diagnosis, as that is really the last thing to be considered, although still so much insisted on by many writers. The distribution of the atrophy is largely a matter of chance. He has seen six cases of progressive muscular atrophy of the perineal type, which is, perhaps, the rarest form of the disease. In none of these was there a cross-distribution of the atrophy, as in Dr. Jacoby's case.

DR. ALEXANDER B. JOHNSON read a paper describing

A CASE OF NEURALGIA OF THE GREAT OCCIPITAL NERVE, WITH SYMPTOMS OF A DESTRUCTIVE LESION OF THE CERVICAL SYMPATHETIC.

The patient was a man sixty years old, married, a railroad conductor by occupation. Denies venereal disease; no alcoholic habit. Had malaria thirty years ago. No distinct history of rheumatism. No signs of organic disease. Over the chest and back he has several old, white, depressed scars, which he states are the result of abscesses he had many years ago, and that they were a long time in healing. The patient presented himself on November 1, 1893, complaining of a severe pain in the right side of the head, which made it impossible for him to work. This trouble began three years ago. The pain is of an aching character and occurs in paroxysms. It is referred to a point about two inches behind the lobule of the right ear, and radiates upward and backward to the vertex. There is marked tenderness on pressure over this area. The patient further complained of inability to see well with the right eye, and the upper eyelid on that side droops so far as nearly to cover the pupil when the patient looks straight before him; the lower eyelid is slightly elevated. The right pupil is contracted, smaller than the left, and does not react to light. The

eye is watery, and the right side of the face is redder than the left. There is no paralysis of the face; but the skin and muscles appear less full, and feel flabby in comparison with the left side. The patient was examined by Dr. M. Allen Starr, who located the lesion in the cervical sympathetic, and advised an exploratory operation, as the patient had undergone medical treatment of various kinds without relief.

On November 4, 1893, an incision, three and one-half inches in length, was made along the posterior border of the right sterno-mastoid, beginning just below the mastoid process. The sterno-mastoid muscle and internal jugular vein were drawn forward and the internal carotid artery lifted up. The superior cervical ganglion was found to be included within the sheath of the internal carotid, to which it appeared to be distinctly adherent. The adhesions were divided and the ganglion freed, as well as the cord below to the extent of two inches. No abnormality in appearance could be recognized either in the ganglion or cord, and the wound was closed. The neuralgic pains and the tenderness of the scalp disappeared at once after the operation. The lachrymation and flushing of the face ceased. The pupil on the right side reacted slightly to light and became a little larger, and the right upper eyelid drooped so little that it was scarcely noticeable, and did not at all interfere with vision. At the end of six weeks, however, all the symptoms had returned; and at the present time the patient finds himself in no way improved.

In closing his paper, Dr. Johnson said that while the symptoms in this case were fairly typical of paralysis of, or a destructive lesion of the cervical sympathetic, it is possible that they were due to a lesion of a destructive character situated in the spinal cord, the exact location of which it is at present impossible to determine. He was unable to explain the immediate temporary benefit of the operation in this case, excepting that it was the result of a powerful peripheral impression.

DR. WILLIAM M. LESZYNSKY referred to a case which he presented some years ago, in which there was hæmorrhage into the cervical portion of the cord, with decided symptoms of involvement of the cervical sympathetic on the same side.

The PRESIDENT said that Krouse (*Zeitschrift für Klinische Medizin*, 1891) reports nine cases of crushing accidents to the spinal cord, involving the lower cervical and upper dorsal segments, in which there were marked symptoms referable to the cervical sympathetic. Regarding the case narrated by Dr. Johnson, Dr. Starr said his own impression was rather against the idea of a cord lesion, on account of the absence of other cord symptoms, although that was not a valid reason for excluding it entirely.

DR. BOOTH presented

A CASE OF HYSTERIA, WITH PECULIAR EPILEPTOID ATTACKS.

The patient was a male, aged twenty-two, jeweller, a native of Germany. During the past two months he has had attacks when he suddenly begins to sing, to slap his knees with his hands (either one or both), and to stamp his feet. The attacks come on without apparent cause, and occur frequently during the day and occasionally at night. Each attack lasts only a few seconds, and ends with a screech. Patient does not lose consciousness. When he was eight years old

he had similar attacks, extending over a period of nine months: again, three years ago, he had them for a period of about one year. At that time he went under treatment at Strasburg, Germany, but received no benefit. The attacks ceased of themselves. Patient does not smoke; drinks moderately; practised masturbation to some extent when he was younger, and continued it for three years. Family history negative. Never had a blow or fall. Denies venereal disease.

ELECTRICAL REACTIONS AND THEIR VALUE IN DIAGNOSIS AND PROGNOSIS.

The PRESIDENT stated that the subject of electrical reactions, and their value in diagnosis and prognosis, which had been taken up at the last meeting, was such an important one that it had been decided to continue it at this time.

DR. FREDERICK PETERSON said that in the main he agreed with the previous speakers regarding the reaction of degeneration, and with the conclusions recently published by Remak, in particular. We have found that both nerves and muscles may respond to both the faradic and galvanic currents, and yet degeneration may exist. With the galvanic current, polar changes are inconstant; CCC may be greater than AnCC. In normal muscles we occasionally find, on the other hand, that AnCC may be greater than CCC. There is one sign that may be considered as always present where there is degeneration in the spino-muscular portion of the motor tract, and that is, the sluggish, vermicular contraction of the muscle. Furthermore, in the great majority of cases of degenerative lesions in the anterior horns or peripheral nerves, the faradic reactions are diminished or lost. Dr. Peterson felt that not sufficient stress had been laid upon the actual value of electro-diagnosis in distinguishing cerebral palsies from the degenerative cases. He was convinced that most neurologists found it of the same value as heretofore, though we had modified our opinions as to the manifestations.

One of the speakers at the last meeting called attention to the occasional occurrence of atrophy with degenerative reactions in cerebral palsies, as cited in two cases by Eisenlohr some years ago. It was interesting to know that Eisenlohr had recently made autopsies in both of these cases, and found degeneration in the peripheral nerves. Other observers have found atrophic changes in the ganglion cells of the anterior horns in cases of hemiplegia with muscular atrophy. There is no evidence in those rare instances in which muscular atrophy accompanies cerebral palsy that the trophic change is produced by an affection of the trophic centres in the brain. On the contrary, all the evidence at hand shows that the atrophy depends upon degenerative lesions in the spino-muscular portion of the motor tract. The value of the electrical examination remains therefore as before.

The electric reactions are certainly of great value in the distinction of the primary muscular dystrophies from progressive spinal atrophies.

DR. J. F. TERRIBERRY continued the discussion. He confined his remarks to the value of electrical reactions, as regards diagnosis and prognosis, in paralysis of the facial nerve, and gave the following conclusions, which he had deducted from an analysis of twenty-four such cases coming under his observation:

(1) That we have in electricity an agent of the

highest value as an aid to diagnosis in paretic troubles of the seventh nerve.

(2) That the value of electricity as an aid to prognosis in facial paralysis is comparatively slight. Less than one-half the cases reported could be prognosticated, and even those with considerable hesitation.

(3) That those cases in which the degree of paralysis is slight are the ones of which we can speak with most confidence by the aid of electricity.

(4) That it is impossible to foretell the issue of severe cases by means of the electrical examination.

(5) That the teachings of Erb respecting the diagnosis and prognosis of the lesions of the motor peripheral nerves by means of electricity are the best at our command, although very imperfect.

DR. WILLIAM J. MORTON sent a communication on the subject of electrical reactions, which was read by the Secretary. He stated that in case of degeneration of the nerve, the faradic and galvanic excitability is diminished or lost, while in case of degeneration of the muscle the faradic excitability is lost, but there is an exaggeration of the galvanic excitability and an inversion of its normal polar action. This abnormal reaction of an abnormal muscle was, indeed, a most brilliant discovery by Erb, but it has always seemed to him that an over-refinement of diagnostic and prognostic significance has been attached to it. As regards diagnosis, the electrical reaction is often the only means of deciding that a given nerve or muscle is in process of degeneration. In traumatic neuritis, in multiple neuritis, in the sciatic, facial and many other neurites, in the dystrophies and spinal lesions due to affection of the nerve cells of the anterior cornu, it is certainly a great satisfaction to feel sure that the degenerative process exists, and this satisfaction is easily acquired by aid of the electric reactions. He did not, however, consider the reactions of much value in making a differential diagnosis between one and another of the above affections, or between a multiple and migrating neuritis, or between sub-acute or chronic anterior poliomyelitis and a progressive muscular atrophy, or lastly, between a cerebral and spinal lesion. As regards the prognostic value of electrical reactions, Dr. Morton believed that overconfidence is placed in the deductions to be drawn from "the complete" and the "incomplete reaction of degeneration." In its complete form, as we sometimes see it in grave facial paralysis and in infantile spinal paralysis, our prognosis is unmistakably bad and fairly exact. It is in the incomplete reaction of degeneration that we are often proven to be mistaken if we indulge in a too exact prognosis. In cases where the electrical reactions of both nerve and muscle have been completely lost, he has known the muscle to regain some part of its former volume and the normal electrical reactions to return by means of long-continued local treatment by aid of sparks from an influence machine. He considers that the earliest sign of reaction of degeneration is the failure of a muscle to respond to a spark which will set a corresponding normal muscle into contraction.

DR. LESZINSKY said that in making the differential diagnosis between peripheral and cerebral lesions in cases of facial paralysis, the quantitative changes should be taken into consideration: in the peripheral cases there is a quantitative diminution, while in the cerebral cases there is a quantitative increase. In paretic conditions he still relies on electricity, both as regards diagnosis and prognosis. There are cases in

which we make mistakes, but in the vast majority of instances the laws laid down by Erb are correct.

DR. B. SACHS said that if the discussion of this subject at the last meeting had a nihilistic tendency, it was due to the fact that it was treated from the neurologist's point of view, and the speakers were attempting to make out in what way the current would be of value in refinements of diagnosis. He expressed the view that all of us still recognize the vast importance of electricity in the differential diagnosis between cerebral and peripheral cases, or cerebral and spinal cases, and also its great value in functional cases.

DR. E. D. FISHER said that in the main he agreed with the statements made by the previous speakers. In certain diseases, such as dystrophies, chronic anterior poliomyelitis and progressive muscular atrophy, the electrical reactions are of great value. It is true that in the dystrophies we do not get an absolute loss of the faradic response until very late in the disease; with marked atrophy we may still get a response to the faradic current wherever the fibres remain. As regards the differential diagnosis between cases of progressive muscular atrophy and chronic poliomyelitis, in the former we do not, as a rule, get a complete reaction of degeneration — we may get a partial one — while in the latter we are very apt to get complete reaction of degeneration. In differentiating between cerebral and spinal lesions, electricity is of value, although not always essential.

Recent Literature.

Hospitals, Dispensaries and Nursing. Papers and Discussions in the International Congress of Charities, Correction and Philanthropy, Section III, Chicago, June 12 to 17, 1893. Edited by JOHN S. BILLINGS, M.D. and HENRY M. HURD, M.D. Baltimore: The Johns Hopkins Press. London: The Scientific Press (limited). 1894.

The seven hundred and ten pages of this report contain seventy-five papers, with the discussions on them, so condensed as to make the volume a necessary reference-book on the subjects to which it pertains, and so full of matters of vital interest on all questions connected with the care of the sick that it can be read with profit by every one who wishes to keep informed on modern social science. It should be studied by physicians, and hospital officers and visitors engaged in solving the difficult problems discussed therein. We cannot enumerate by title, with our limited space, the many excellent essays which were read; nor can we, as we would like, call attention in detail to the able treatment of the several topics of argument and debate.

The admirable papers on the function and duties of the modern hospital by Dr. Billings and Dr. Cowles are fully supplemented by thirty-five others covering all points of hospital administration, including the education of physicians and surgeons and training schools for nurses. The greatest advances in the last two decades have naturally been in the way of hygiene, cleanliness in its broadest sense, in development of the system of training highly-qualified nurses, and in a more general use of cottage hospitals in the smaller cities and towns. The next movement must lie in the more intelligent control of infectious diseases by abol-

ishing the "pest-house" and by the construction of isolation hospitals for scarlet fever and diphtheria particularly, of which there are so few in this country. Dr. Thorne Thorne had hardly made the remark that a small-pox hospital should not be within a mile of an inhabited house, as quoted by Dr. Rowe, before more recent researches showed such over-caution to be only consistent with the pest-house idea; while Dr. Davis regards a furnace for garbage, rooms for disinfection by superheated steam and a crematory for the dead quite essential within the grounds of every hospital for infectious diseases.

The one hundred and eighty-six pages given to the consideration of nursing of the sick will amply repay a careful reading.

Dr. Field's description of the reception pavilion for the insane at Bellevue Hospital, with his appeal for the establishment of similar detention hospitals for deciding questions of insanity, and the proper treatment of each person examined in them, in every large city of the United States, and Miss May's six pages on nursing of the insane, comprise all of the volume which is devoted to that important branch of hospital care of the sick. The search-light that has been so well directed to the general hospitals has not yet fully reached the hospitals for the insane, although the advances there, too, have been great.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics and Hygiene in the University of the City of New York, etc., and TRACY C. BECKER, A.B., LL.B., Counsellor-at-Law and Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. With the aid of numerous collaborators. In four volumes. Vol. I. New York: William Wood & Co. 1894.

The obvious intention of the projectors of this extensive work has been to collect in one publication all matters concerning which law and medicine have a hyphenated interest through their mutual relations one with the other, embracing all topics which usage and propriety designate as medico-legal. And it is a pleasure to state at once that if the standard of excellence illustrated in this initial volume is maintained in the three volumes to follow, the two professions of law and medicine will have at their disposal an encyclopædic work of the highest character. The critical reader finds much to praise and little to censure in the plan and execution of so much of the treatise as the present volume exhibits. As is usually the case with a book of composite authorship, there is some inequality in the various chapters; a few appear to have been written hastily and under stress of a pressing requisition for material to be supplied before a stated time, but nearly all the contributions show care, study and finish. Taken as a whole, this volume represents wide research, judicial fairness and freedom from dogmatic self-assertion. The announced list of contributors leads us to anticipate a continuation of these characteristics in the remaining volumes and to declare that as a comprehensive reference-book relative to all medico-legal subjects, this will stand without a peer.

The title of the work offers a novelty in nomenclature. It has been customary to regard Medical Jurisprudence, Forensic Medicine and Legal Medicine as interchangeable and synonymous terms, and this custom still prevails. But it is explained in the introduc-

tion to this volume that there is a real difference which should be recognized, that Medical Jurisprudence treats of "medical law" and that Forensic Medicine deals with "the application of medical, surgical or obstetrical knowledge to the purposes of legal trials." We cannot avoid thinking that this differentiation is arbitrary and unnecessary. That its adoption would be difficult among medico-legal writers and students is well illustrated by the fact that it is not uniformly respected in this volume or, indeed, by the editor himself in the later pages of his introduction.

But the distinction above mentioned offers a convenient opportunity for a broad classification of legal and medical topics in the body of the book. Under the caption of Medical Jurisprudence, several able legal writers have contributed chapters which set forth the legal principles, the judicial decisions and the statutory regulations which govern and control medical practice. The legal rights and duties of medical men in the care of the sick, in the court-room, in the autopsy-room and wherever else they exercise their professional knowledge, are fully and satisfactorily defined. It is interesting to note, in passing, that in the admirable digest of the laws governing the practice of medicine, Massachusetts and New Hampshire are designated as the only States which are without special statutes designed to protect the public from quackery.

In that portion of the book devoted to medical rather than legal themes, are chapters on medico-legal autopsies, personal identity, wounds, death by heat, cold, electricity, hanging, strangling, suffocation, drowning, and starvation. All these subjects are elaborately treated and some of them, like the Medico-Legal Relations of Electricity, for example, have special value because of the contemporaneous interest in the topic and the thoroughness of the author's method in discussing it. The entire volume shows a manifest purpose on the part of its contributors to present whatever they have found to be of medico-legal utility in the latest advances in medical science and all concerned in the preparation of the work, editors, collaborators and publishers, can be congratulated cordially upon the genuine success which has marked their endeavor.

The Principles and Practice of Surgery. By JOHN ASHURST, JR., M.D., Barton Professor of Surgery and Professor of Clinical Surgery in the University of Pennsylvania; Surgeon to the Pennsylvania Hospital; Senior Surgeon to the University Hospital and to the Children's Hospital; Consulting Surgeon to the Woman's Hospital, to St. Christopher's Hospital, etc. Sixth Edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co. 1893.

This is the sixth edition of a work which has been very popular. The author has endeavored to incorporate many of the more important recent observations in surgical science. "An entirely new chapter has been introduced, on Surgical Bacteriology," by Prof. Charles B. Nancrede of the University of Michigan. The specialties on the eye and ear have been scrutinized and revised by colleagues of the author.

The author "ventures to express a hope that in its present form, his volume, though necessarily compendious in its mode of dealing with different subjects, may be considered as affording a satisfactory representation of modern surgery." The work is one of those few works which have survived the advent of modern

methods; and while much of value is retained which existed before antiseptics, yet a strenuous effort has been made to introduce the valuable parts of modern methods. In this we do not believe the author has fully succeeded. The book is condensed, well written, and intended to cover the whole field of surgery; but we cannot help believing that it would be improved by omitting the parts on special surgery. As a matter of example, the presentation of the subject of diseases of the joints and of orthopædic surgery is lamentably behind the times. In this work Americans stand well towards the head; and the apparatus which is represented and the methods spoken of are those of the English school of orthopædics of thirty odd years ago.

The book has a distinct value in that the author retains many of the points and hints of treatment with which the older books were filled; but, as a whole, it cannot be considered a work representing modern surgery.

Infectious Diseases, Notification and Prevention. By LOUIS C. PARKES, M.D., London, D.P.H. Pp. 185. London: H. K. Lewis. 1894.

This compact and handy manual contains all the existing English laws upon the sanitary management and control of infectious diseases. Part I presents these laws, together with full explanatory notes by the author. Part II contains much useful information in a condensed form, upon various practical subjects relating to the diagnosis and the prevention of infectious diseases. The special topics treated are Incubation Periods, Quarantine, Infective Periods, Sources of Infection, Infectious Outbreaks in Schools, Isolation at Home, Disinfection, the Relation of the Medical Officer of Health to the Medical Practitioners of his District.

The clear and intelligent arrangement of the descriptive matter under the different infectious diseases will commend the book to every practical sanitarian. The tables were collated from the report of a committee appointed by the Clinical Society of London to investigate the periods of incubation and contagiousness of certain infectious diseases.

This extremely practical hand-book should be in the hands of every American health-officer, and will be found very useful to the general practitioner.

Diseases of the Eye. A Practical Treatise for Students of Ophthalmology. By GEORGE A. BERRY, M.B., F.R.C.S. Ed., Ophthalmic Surgeon, Edinburgh Royal Infirmary, etc. Second edition, revised and enlarged, with colored illustrations from original drawings. Pp. 727. Philadelphia: Lea Brothers & Co. 1893.

This book is emphatically what its sub-title states it to be, "a practical treatise for students of ophthalmology." It is comprehensive and concisely written, and a judicious proportion has been observed in the allotment of space to the different subjects. The illustrations which are incorporated in the text are, in the main, colored prints from original drawings. Those representing the external diseases of the eye are, with a few exceptions, satisfactory, and much superior to any we remember to have seen in students' text-books. The plates representing diseases of the fundus are even better, and are beautiful specimens both of drawing and reproduction.

With regard to the much-discussed question of whether to do an iridectomy or not in cataract operations, our author has but one opinion, and that is, that

a small iridectomy should always be done, and dismisses the whole subject as follows: "The only disadvantages (of an iridectomy) are, therefore, a wound in the iris and a less beautiful pupil. . . . The cosmetic advantages of a round, active pupil, when it can be obtained, are altogether trifling in those elderly individuals who are the usual subjects of cataract extraction. The game is, in fact, not worth the candle."

In regard to the after-treatment of cataract, he places his bandage only over the operated eye, as, in his opinion, the pain caused by moving the eyes about before the anterior chamber is re-established is sufficient to compel the patient to refrain from using his eyes. He believes that the patient should be kept in bed "at least two days," and the room in semi-darkness.

The subject of treatment throughout the book is clearly and conservatively written. In the treatment of trachoma, while excision of the retrotarsal fold is described, no mention is made of expression of the follicles, as is so commonly done in America; and we were surprised to note that no mention of antiseptic collyria or ointments is made.

Upon the whole, however, the book is an eminently satisfactory text-book.

A Practical Treatise on Medical Diagnosis. For Students and Physicians. By JOHN H. MUSSER, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia; President of the Pathological Society of Philadelphia, etc. Octavo, 873 pages, 162 engravings and 2 colored plates. Philadelphia: Lea Brothers & Co. 1894.

The number of treatises on the Theory and Practice of Medicine by American authors is rapidly increasing. The one before us by Dr. Musser on Medical Diagnosis is in many respects a very good book. Its arrangement is simple. It is divided into two parts: Part I is devoted to General Diagnosis, and consists of chapters on General Observations; the Data obtained by Inquiry; the Data obtained by Observation; Bacteriological Diagnosis; the Examinations of Exudations, Transudations, Cystic Fluids; the Morbid Processes and their Symptomatology. Part II is devoted to Special Diagnosis. The first seven chapters deal with Anatomical or Regional Diagnoses; chapter eight deals with Diseases of the Blood and Ductless Glands; chapter nine with Constitutional Diseases; chapter ten with the Infectious Diseases; chapter eleven with Diseases of the Nervous System.

The book emphasizes the extent to which instruments of precision and laboratory processes have superseded, or at least simplified, the older and slower methods of minute observation and elaborate systems of differential diagnosis. But we do not wish to indicate by this statement that the author underrates the importance of careful inquiry and observation. The pages merely show plainly, what every hospital physician or teacher of long experience realizes daily more and more, that the last ten years have revolutionized in many ways the means, the methods and the details of diagnosis. This is nowhere more apparent than in diseases of the blood, than in the information to be had from microscopical examinations of the blood and exudations. A differential diagnosis of typhoid fever, or the stage of a pneumonia, may be determined in the laboratory; and even the stethoscope and the thermometer are being shorn of some of their glory.

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THE DOCTOR IN FICTION.

It is well worth the contemplation of an idle hour to consider the position held by the medical man in the fiction which, in the reading world of to-day, plays so important a part. We have all of us seen the doctor appear in the drama — the apostle of science, the wise counsellor to the interesting invalid, the good elderly walking-man of the piece; and we have all no doubt wondered whether we individually appear to the world at large, such mild inanities. In fact, it must be admitted that the doctor has hitherto not been accorded a very prominent place in light literature, especially in English literature, when compared to that granted to the clergyman or lawyer. Perhaps the reason for this is that English society, which the novel tries to depict, still lingers in the miasma of feudalism, and the doctor whose career leads neither to place nor power has no proper position in a society which grants precedence to title inherited by primogeniture or to the dignity of landed estates.

To Richardson, Fielding, Addison, Goldsmith and Sterne, the doctor had little that was picturesque or interesting; and the earlier great writers, Chaucer, Spenser, Milton, of course, found little use for the leech or the barber-surgeon. Shakespeare, who mirrored all life, used the doctor only occasionally as in a minor part, finding him of no more importance than the apothecary, or the wise woman who was consulted in regard to Falstaff's health.

Now and then, in later literature, a mention is to be found of a medical man, as when Cowley, in poetic frenzy, compares Dr. Scarborough cutting for stone to Moses striking the rock. Mr. Samuel Warren, as is well known, a physician of repute and note of the past generation, has written at least one novel "£10,000 a Year" which has outlived his time, and has vitality to-day. But these are exceptions. The great novelists, Scott, Thackeray and Dickens, found little employment for doctors in their works, although the former must have lived in an atmosphere in Edinburgh

redolent with the fame of surgeons. Thackeray dedicated one of his novels to his physician who had "brought him through" a severe illness; but to him doctors were apt to be socially off color, and it is put to Pendennis's credit that he did not deny the fact that his father drove a gig and visited patients. Dickens exercised some of his humor upon doctors, making the doings of the young "Sawbones" amusement for a generation. Trollope, considering how much he wrote and that, too, in the low tone of mild realism, with sober tints well suited to the sombre character of the doctor, made but little of the physician as compared with the clergyman or lawyer.

Charlotte Brontë introduces a physician prominently in "Villette." George Eliot, however, makes a great exception in "Middlemarch"; her character of Lydgate — one of her most interesting creations — illustrates well the aspirations of a young and ambitious physician, and the pitfalls and easy path to failure. Miss Evans always worked carefully and evidently in thorough sympathy with medical life; and in her description of Lydgate's treating a case of delirium tremens, the authoress gave evidence of her thorough study of the subject, for she makes her medical hero anxious to try the treatment advocated by Dr. John Ware, of Boston, in a monograph which, if known in the medical thinking world of that day, is almost forgotten now, even in his native city.

In France, doctors seem to have always been in popular favor, even in the days when their absurdities were such as to be made famous by the wit of Molière. Their prominence in the community inspired the critical genius of the dramatist; and the medical profession of succeeding generations are his debtors for the immortal life he gave to those errors and follies which the successful practitioner, to-day as in the seventeenth century, should seek to avoid. But of all writers of fiction Honoré de Balzac, the greatest of the novelists of the modern school, as well as the founder of that school, was most in sympathy with the physician. He was fond of introducing in his "Comédie Humaine" the mythical Bianchon, the enthusiastic student in the École de Médecine, laboring hard at the cliniques and laboratories, while his contemporary, Rastignac, was seeking to advance his fortunes by intrigue in the salons and boudoirs of the Faubourg St. Germain or at the Tuileries. Later, Bianchon becomes the famous surgeon, who lives a successful life devoted to professional work, while fortunes and intrigues have fallen in the foolish worldly game of personal advancement. To Balzac's mind evidently the physician lived a life of calm content in his own work; and in his devotion to that science which was above the folly of courts, outlived revolution and dynasties and fulfilled a career high in its purpose and broad in its scope, with the ideal enthusiasm of a religious devotee. In the "Médecin en Campagne," Balzac has presented not only the highest type of a physician in fiction, but has given to posterity a figure to be respected by all. A strong man is portrayed whose life was blasted in early

youth by the consequences of youthful indiscretion, but who rose from the chastisement to the noble work of elevating a community, not only helping the sick, but teaching by example and by personal influence the wisdom of a sane life. Beloved and respected by all, not a self-seeker, but arbitrary in enforcing what was best for the health of his patients and of the community, broad, far-seeing, strong and self-sacrificing, M. de Benassis will live to remind the reading world of the possibilities in a medical career — possibilities which the annals of the medical biographies in every community show not to be simply figments of the brain of a romancer.

Recent French literature has produced nothing equal to Balzac, and no medical figure equal to his "Country Doctor"; but one of the most dramatic scenes in that best of recent novels, "*Les Rois en Exile*," is laid in a physician's office, where the last of one of the royal families of Europe is brought *incognito* to seek advice, bearing the curse of a malady inherited from a father who thought more of the Jardin Mabille than his lost throne; the queen-mother sits in the waiting-room of a celebrated surgeon with peasants and tradespeople, and, when her turn comes, hears from the oracle of that science which knows no kings or royalty, that her son's blood, the noblest blood in Europe, is tainted.

In America, the doctor has always been a man of influence, and we should expect he would receive due attention in literature. The American novel, however, is of recent growth; for Cooper worked on European models, his matter, except in descriptions of scenery, was not American, or at best only what Cooper thought was American. Hawthorne, our great romancer, did not study real life in the commonplace world around him; he was a morbid psychologist, a mental pathologist with wonderful beauty of language. He has, however, left us a sketch of a medical recluse in "*Dr. Grimshaw*," which shows the handiwork of a master even in its outline. An excellent physician appears in "*Elsie Venner*," alive with the intelligence of the author, our honored Professor Emeritus, the Autocrat of the Breakfast Table. Our working American novelists, James, Howells and Cable, have all tried their hands on doctors. Mr. James, who is essentially the novelist of good manners, and who writes from the point of view of a man of the world, evidently recognizes the fact that the doctor in America may perfectly well be a man of good society, which appears not to be the case in London. Still Mr. James's attempts at creating doctors have not been successful; they are doctors only by title, without any medical vitality. Mr. Howells has done better with Dr. Mulbridge in "*Dr. Breen's Practice*"; but to our minds, Dr. Sevier, the central figure in one of Mr. Cable's best stories, is a creation of much more than passing excellence. The force, the quick and broad sympathy, the impatience of shams, the *sava indignatio* at the silliness and imbecility of the average of mankind, are not only well depicted, but true to the

type of physician. The creole is represented as being a man of large practice, of a lonely life, of much sorrow, and with the acuteness to see that his sorrow was earned by violation of the laws of health and must be manfully borne. Miss Jewett has produced a valuable study with an abundance of local color, in her "Country Doctor"; and Judge Grant, in his "*Reflections of a Married Man*," intimates that in American society, even among "smart" people, the presence of a few distinguished specialists is desirable to complete the social gathering. In this author's last book, "*The Opinions of a Philosopher*," there is a "snap" pen-picture of Miss Cora Jacket, M.D., "a regular practitioner in the allopathic line," and Winona, the hero's pretty daughter, becomes a practising Christian Scientist. Crawford, in his last story, "*Katherine Lauderdale*," the scene of which is laid in New York, gives us a pleasant glimpse, in the person of Dr. Routh, of the general practitioner who is the family friend and adviser, whose aid and counsel are sought in a delicate and perplexing emergency, and who saves the honor of his patient by a letter to the newspapers, as he saves his health by dietetic prescriptions.

The female physician has already been served up in several different forms; but she will probably appear again, as the subject is one which is not yet exhausted.

A fact to be noted is the *début* in the world of fiction of our celebrated specialists, Dr. Weir Mitchell and Dr. Hammond. The latter, in addition to those novels already written, promises to write two every year, thinking that physicians have an inexhaustible fund of knowledge of human nature, dealing as they do in humanity as their staple commodity and sampling it in different grades, for the stamp of different treatment. There seems to be no reason why physicians should not write novels, now that novel writing is becoming a pastime, like bicycling or base-ball or tennis. Of course, the professionals are the masters, but the amateurs may make a good deal of fame for themselves. We shall have all the neurologists and alienists illustrating their views of life by some horrid example held up to the terrified public. It affords an amusing relaxation, and will do but little harm. In fact, it must steady the nerves harassed by care; at least, Lord Beaconsfield found it so, and consoled himself when vanquished by publishing "*Endymion*." Why should not physicians also partake of this new anodyne, if they can find the time after their severer labors?

THE DISCUSSION ON THE PARASITISM OF CANCER AT THE ELEVENTH INTERNATIONAL CONGRESS OF MEDICAL SCIENCES.

ONE of the most interesting discussions at the Eleventh International Congress of Medicine, held recently in Rome, was that on the parasitism of cancer, in which Pio-Foa, Cornil, Duplay, Cazin, Ruffer and others took part. It is known that Pio-Foa, referee, is one of the most strenuous advocates of the

parasitic or infectious nature of malignant neoplasms. The "parasites" are certain protoplasmic bodies — when fully developed enclosed in a distinct capsule — contained in the cancer cell, sometimes within, sometimes without, the nucleus, and resembling the spores of protozoa. Soudakevitch, Ruffer, Walker, Clarke and others have described such elements, which they regard as sporozoa, bearing a resemblance to the hæmatozoa of malarial fever. These parasites are common to almost all cancers of glandular origin. The peripheral portions of the neoplasm contain parasites of small dimensions, while at some depth from the surface are found large sporocysts.

In parts which are rich with parasites, karyokinesis is wanting or is little marked. On the other hand, in parts where the proliferation of the tissues is active, the parasites are wanting, or are few in number. This shows that they live, but in tissues whose vitality is low. Arguments were advanced to prove that these strange bodies were not degenerate cell nuclei. Pio-Foa claims to have followed all the stages of development of these parasites from a little corpuscle the size of a nucleolus, to the sporocyst as large as a full-sized cell nucleus. Thus far, it has been impossible to obtain cultures of these parasites. Cancer is not inoculable by grafting, except in individuals of the same animal species.

Though parasites may not be found in all tumors manifestly cancerous, they doubtless exist there in the state of spores difficult to distinguish from nuclei. These spores "infect other cells, and are transported with them into the secondary nodules where the parasite develops anew, and where it infects other histological elements. The cells containing the parasites eventually die and disintegrate, while the surrounding cells undergo a process of active proliferation.

Professor Cornil, of Paris, declares himself as yet far from convinced that the forms which Foa and others described were parasites. We find in cancer a great number of modifications of the form of cells and of nuclei which might easily be taken for parasites. The nuclei of cancerous cells divide sometimes into two, sometimes into three, four or more secondary nuclei, and these divisions end in the production of two or more cells, each containing a nucleus, or in the production of several nuclei inhabiting the protoplasm of several cells.

The nuclei of the cells undergoing division are small, rich in chromatic material, but they soon become fimbriated on their borders, knobbed, with predominance of liquid in their interior; they may become completely achromatic. They will then present the most varied shapes, from crescents to double sacs, crowns, little knobby or spherical masses (secondary nuclei) containing little coloring substance. These transformed nuclei sometimes present an oedematous appearance (hydropic nuclei).

Much of Cornil's description we omit as being too long and too technical. The result of close observation with staining methods has convinced him that

Foa's parasites are only metamorphosed nuclei, a product of morbid karyokinesis. According to Cornil, there are found also in cancer degenerated cells whose protoplasm stains red, and which contain in place of nuclei granules, filaments, or masses of nuclein representing the different forms of indirect division, without the occurrence of achromatic filaments or of clear space around the divided nuclein. These are cell degenerations arrested in one of the phases of indirect division of the nuclei. Cornil remarked that even migrating leucocytes interposed between cancer cells had been mistaken for parasites, especially when they had retrograded and had broken up into fragments of nuclein.

Duplay and Cazin, of Paris, stated that their researches on the structure of the constituent elements of epithelial cancers had led them to the same conclusions as those of Professor Cornil. The coccidia of Foa and others are only forms of cell degeneration, products of "indirect division," and have no parasitic character.

Ruffer, of London, spoke in support of the claims of Pio-Foa, corroborating his conclusions, while Morpurgo, of Turin, as stoutly confirmed the position of Cornil, Duplay and Cazin. So that the parasitic, and in particular the psorospermic origin of cancer, may be considered as still *sub-judice*. We have to oppose to the weight of Professor Cornil's assurance that the "organisms" are simply altered histological elements, the decided opinion of Metchnikoff and Sims Woodhead that they are "undoubted coccidia." Admitting the nature of these bodies to be parasitic, it might be claimed that they are only accompaniments of malignant growths, not the cause. The conditions of their growth and development, according to Dr. Sims Woodhead are a lowered condition of the vitality of the epithelial elements in which they make their habitat. Finding a suitable soil, they multiply, secrete their toxins, and by their irritant action on the parts which they invade, resemble certain well-known pathogenic microbes, especially Koch's bacillus, in the degenerative processes and products which they entail. One extremely weak link in the chain of evidence, as Dr. Woodhead admits, is that hitherto inoculation experiments with cancerous material have very rarely been successful in producing any cancerous reaction.

VITAL STATISTICS OF ENGLAND FOR 1893.

THE Registrar-General of England publishes an advance-sheet or abstract of the vital statistics of England and Wales at a much earlier date than that of the annual report, which is rarely published till a year later. From this advance-sheet, just received, we learn that he estimates the population as 29,731,100 at the middle of the year 1893, this being an increase of 728,575 over the number of the population as taken by the Decennial Census of April 6, 1891.

The marriages in 1893 were 218,251; the births were 914,189; and the deaths were 569,923. These

figures give a marriage-rate of 7.34 per 1,000 of the estimated population (14.68 persons married), a birth-rate of 30.75, and a death-rate of 19.17. Estimating the excess of females over males to have maintained the same rate of increase as for the ten-year period 1882-1891, the death-rate of males was 20.27, and that of females 18.14 per 1,000, or as 1,000 females to 1,117 males in equal numbers living.

The figures for London were as follows (1893): marriage-rate, 8.58 (persons married, 17.17); birth-rate, 30.86; death-rate, 20.83.

The healthy excess of the birth-rate over the death-rate in England, amounting to nearly 50 per cent. (48.1), presents a strong contrast with the vital statistics of France, which are as follows for the years 1891 and 1892:

	1891	1892
Marriages	285,456	290,319
Births	866,377	865,247
Deaths	876,882	875,888
Excess of deaths over births	10,505	20,041
Marriage-rate	7.4	7.3
(Persons married)	14.8	15.0
Birth-rate	22.5	22.3
Death-rate	22.8	22.7

MEDICAL NOTES.

SMALL-POX AT SING SING.—Three new cases of small-pox occurred this week among the men working in the rag department of Sing Sing Prison.

UNITED STATES QUARANTINE PHYSICIANS FOR EUROPEAN PORTS.—The detail of surgeons from the Marine-Hospital Service for duty at European ports during the coming summer has been made. Three of the appointments are the same as last year: Dr. Woodward to Hamburg, Dr. Stimpson to Rotterdam, and Dr. Brown to Havre. The other appointments are as follows: Dr. Magruder to Naples, Dr. Perry to Genoa, Dr. Vaughn to Bremen, Dr. Carmichar to Antwerp.

BOSTON AND NEW ENGLAND.

BOSTON CITY HOSPITAL HOUSE-OFFICERS.—The rules of the Boston City Hospital have been changed so as to open the competitive examinations for positions as house-officers to graduates in medicine of not over three years' standing.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the six days ending at noon, April 17, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 28, scarlet fever 37, measles 11, typhoid fever 15, small-pox 1 (with 1 death). There are now 6 patients in the hospital. During the same period 8 cases of small-pox were reported to the State Board of Health, 3 from Chicopee and 5 from Holyoke.

THE BOSTON SCHOOL COMMITTEE AND VACCINATION.—At a recent meeting of the Boston School Committee the question of enforcing the present statute requiring vaccination of pupils in the public schools was brought to a vote, and was decided most properly in the affirmative. Six members of the board voted to

do away with the regulation. They were Miss Hastings, Miss Pingree and Messrs. Blanchard, Estes, Winship and Wise. A most excellent example, surely, to set the young aspirant for citizenship, to disregard the law at the very threshold of the public school!! "As the twig is bent" —

DIPHTHERIA AT WAREHAM.—So many cases of diphtheria have occurred during the last week at Wareham, Mass., that the public schools have been closed.

THE SMALL-POX AT CHICOPEE.—The number of cases of small-pox at Chicopee has become so large that the Board of Health has decided to build a quarantine hospital, as first proposed in the winter, but rejected on account of expense.

THE STATE SUPERVISION OF VACCINE FARMS.—The Committee on Public Health of the Massachusetts Legislature, in response to the hearing at which committees from the Norfolk and Suffolk District Societies presented petitions with the draft of a bill to establish State farms for the production of vaccine virus, has reported, not the desired measure, but a bill to place "all vaccine institutions in the commonwealth under the supervision of the State Board of Health." Such an act, if passed, will make the last state of the matter worse than the present one. The bill confers no defined powers and prescribes no penalties. It establishes a supervision which does not supervise, and private institutions will be the sole gainers, in being able to claim for their products State guarantee, while the public at large will be led to rest in a false security.

THE RHODE ISLAND ANTI-VACCINATION BILL.—The Anti-Vaccination Bill before the Rhode Island Legislature came dangerously near being passed by the House last week. Although a bill carrying such a menace to the public health was under consideration, there was such a disgraceful apathy on the part of the legislators that the House was obliged to sit for four hours with locked doors to compel the attendance of members. After a bitter discussion, the bill was finally lost on the deciding vote of the speaker. That such a proceeding could have occurred in a civilized community in the year 1894 is not a fact to be passed over lightly. If anything marks the true advance of a community towards a higher plane of social enlightenment, it is the attention which such a community pays to questions of public sanitation and hygiene. The average community is not overprotected by proper and sensible statutes regarding public health; but if there is one such, it is beyond question the enforcement of vaccination. To abolish any such regulation is to step back two centuries.

CONDITION OF THE MATHER SCHOOLHOUSE.—The Committee appointed by the Boston School Board to inquire into the sanitary condition of the Mather Schoolhouse, in view of the numerous cases of contagious disease among the pupils during the early winter, has reported as follows: "The Mather Schoolhouse is

an old building, far too small for the number of rooms into which it is divided; the lot is about one-half the size of an ordinary schoolhouse lot. Each class of fifty-six pupils is occupying floor space equal to about two-thirds the area of a modern schoolroom. The windows in the rear of the school building are close to the sanitariums. The windows of the police station, which ventilate the cells, open on the schoolhouse-yard and emit foul odors a few feet from the schoolhouse windows.

THE SIXTY-FIRST YEAR OF THE BOSTON LYING-IN HOSPITAL. — The annual report of the Boston Lying-in Hospital for 1893 shows a continued high record of usefulness. The year just closed is the first completed in the finished new hospital, and the building has proved in every way to be admirably adapted for its purposes. Five hundred and one women were treated in the hospital, an increase of one over 1892. There were 505 children born during the year. In the Out-Patient Department 1,352 women were cared for — an increase of 274. Out of this total of 1,853 patients only 4 died, a mortality of less than one-quarter of one per cent. One woman died in the hospital in convulsions from chronic Bright's disease twenty-eight days after entrance. Among the out-patients two women died of pulmonary embolism and one of eclampsia. In addition to these, three out-patients were sent to the general hospitals suffering from septicæmia: one recovered, one died from mania, and one of old cardiac and pulmonary disease. Certainly such a record is one to be proud of. The work, especially among the out-patients, has increased so much that the number of house-officers has been raised to three — each officer now serving two months as junior in the house, two months as assistant physician to out-patients, and two months as senior house-officer. The house-patients were 206 Americans and 295 foreigners. Three hundred and eight were married, 193 single. The training-school for nurses gave diplomas to fifteen graduates.

NEW YORK.

VACCINATION REQUIRED OF THE CREWS OF NETHERLAND STEAMERS. — Dr. Jenkins, Health Officer of the port, has notified the Netherlands line, two of whose steamships have recently arrived with cases of small-pox on board, that their vessels will not be allowed to enter the port of New York unless their crews have been vaccinated before leaving Rotterdam. He has also notified the United States Consul at Rotterdam that clearances for New York should not be given to the Netherlands line steamships until this provision has been carried out and until disinfection of the persons of all their passengers and seamen has been made.

MORTALITY. — The general health of the city continues unusually good for this season of the year. During the week ending April 14th there were reported 853 deaths, which was 21 less than in the previous week, and represents an annual death-rate of 22.37 per thousand of the estimated population. The cold and

stormy weather had apparently some effect in increasing the mortality from pneumonia, which caused 125 deaths, a larger number than occurred from any other one disease. Diphtheria caused the largest number of deaths among the contagious diseases, 41. The mortality from scarlet fever amounted to 20, and from small-pox, to 7. During the week 1,012 births were reported.

Miscellany.

VACCINATION IN THE JAPANESE NAVY.

The annual report of the health of the Imperial Japanese Navy for the twenty-fifth year of Meiji (1892), just published, gives some interesting details as to the success or failure of over 5,000 cases of vaccination.

Of the vaccinations for the first time, 38 were successful and 65 unsuccessful (36.89 and 63.11 per cent.); of the cases vaccinated for the second time, 220 were successful and 457 failed (32.50 and 67.50 per cent.); of third vaccinations, 404 succeeded and 973 failed (29.34 and 70.66 per cent.); of fourth vaccinations, 386 took and 854 failed (31.13 and 68.87 per cent.); of fifth vaccinations, 195 were successes and 562 failures (25.76 and 74.24 per cent.; of those vaccinated for the sixth time or over, 141 were successful and 498 unsuccessful (22.07 and 77.93 per cent.). In cases in which there was an uncertainty as to scars from small-pox, 119 vaccinations took and 193 failed. In all there were 1,503 successes and 3,602 failures, a percentage of 29.44 and 70.56 respectively.

The ratio of success or failure per hundred cases of vaccination during the period of nine years from 1883 to 1891 was 38.98 and 61.02 for all cases; the ratios for the various classes of first, second, third, etc., vaccination being 58.68 and 41.32, 46.80 and 53.20, 35.57 and 64.43, 32.86 and 67.34, 28.25 and 71.75, 26.83 and 73.17.

This last series particularly shows that while the chance of successful vaccination steadily diminishes with each repetition, namely, from 58 to 26, there is still more than one chance in four that even a sixth vaccination will take — a fact which should emphasize the importance of a general revaccination of persons of all ages at the time of any public need.

TAPPING OF THE LATERAL VENTRICLES.

No longer abashed by the fear of entering the peritoneal cavity the surgical Charmides now seeks to penetrate other sanctuaries — even into the inmost recesses of the brain. Tapping through a fontanelle for hydrocephalus is no new procedure; but it is only within a few years that any technical perfection has been reached in withdrawing fluid from an overdistended cerebral ventricle. Dr. Frank, of Chicago, reports¹ two interesting cases of his own, in which the results obtained were sufficiently marked to justify the operation, although both patients died. One was a case of acute hydrocephalus ventriculi resulting from severe injury to the head with multiple fractures of the base, which were made out post-mortem only. After tre-

¹ Annals of Surgery, April, 1894.

phining, the ventricle was opened by an aspirating needle corresponding to a No. 3 catheter (American scale), and about three ounces of fluid withdrawn. There was considerable relief from the pressure symptoms. The second case was one of idiocy following hydrops ventriculorum due to cerebro-spinal meningitis.

After reviewing the history of this radical though rational procedure and discussing the surgical ease and safety with which it can be done, he draws the following conclusions, which are of interest:

"Trephining and tapping the lateral ventricles —

"(1) For distention of the ventricles from acute, simple or tubercular meningitis, is a therapeutic measure clearly indicated, and other things being equal, promises recovery.

"(2) For effusion of blood into the ventricles from trauma or disease, makes recovery a possibility.

"(3) For abscess, involving the ventricles, is immediately and imperatively demanded.

"(4) For effusion into the ventricles, from brain tumors, may afford relief to symptoms.

"(5) For chronic hydrocephalus, moderate distention of the ventricles, without enlargement of head, may afford relief.

"For chronic hydrocephalus, great distention of ventricles, enlargement of head, will lead to a fatal result."

SURGICAL TREATMENT OF PULMONARY CAVITIES.

THE surgical treatment of pulmonary cavities is a department of therapeutic technique which has much to commend it to careful attention. While experiments upon animals and a few remarkable cases have shown that considerable portions of lung tissue may be removed without serious impairment to health, there has been great hesitancy in applying surgical treatment to cases of pulmonary disease which are properly open to it.

In a paper read before the New York State Medical Association, N. Pendleton Dandridge, M.D., of Cincinnati,¹ gives the following conclusions concerning operative treatment:

(1) A certain number of lung cavities can be successfully dealt with by incision and drainage.

(2) Tubercular cavities in the lower portion of the lungs — if single and superficial, and the general condition of the patient permits — should always be opened. Cavities at the apex should only be opened where free and persistent fetid expectoration is present, and has resisted treatment, and the rest of the lung is not involved.

(3) Abscess, gangrene and hydatid cyst should be opened and drained whenever they can be located.

(4) Closure of the pleura should be present before evacuation of a cavity is attempted.

(5) In cases of pyopneumothorax the fistulous track should be explored, and any cavity freely laid open by the cautery.

(6) Cavities that have been opened are best treated by packing with gauze, preferably iodoform.

(7) The further careful trial of such agents as iodoform, chlorine gas, and chloride of zinc, is desirable to determine as to whether the tubercular infiltration may not be modified by them.

¹ *Annals of Surgery*, February 1, 1894.

(8) It is very desirable, for the further extension of surgical interference in pulmonary cavities, that the means of locating such cavities, and of determining their size, and the exact character of the tissue that overlies them, should be perfected by further study, and for the accomplishment of this the surgeon must look to the physician.

TWO ATTACKS OF TYPHOID FEVER IN THE SAME PERSON.

THE few opportunities for accurate observation of two attacks of typhoid fever in the same patient, especially under similar conditions, make reports of such cases of considerable interest.

Drs. Hand and Patek report¹ such a case from the service of the German Hospital in Philadelphia. The patient, a woman aged nineteen years, entered the hospital March 29, 1893, having been unwell for several weeks, and in bed six days. She had a typical mild attack of typhoid fever, and was discharged in good health five and a half weeks after entrance. On September 21, 1893, she was readmitted. On the ninth day she had a second attack of well-marked typhoid fever. This ran an uncomplicated course, and she was discharged in four weeks. In each attack there was enlarged spleen, gurgling in the right iliac fossa and typical rose-spots. The treatment was the same during each attack: a bath every three hours when the temperature was over 102°. During the first illness she had forty-three baths, and in the second thirty-eight. The temperature reached normal on the same day on each occasion.

THE MUÑIZ COLLECTION OF SKULLS.²

THE nineteen trephined skulls selected from the large collection of over a thousand crania gathered by Señor Manuel Antonio Muñiz, M.D., Surgeon-General of the Peruvian Army, form the largest and most instructive collection of specimens of primitive trephining thus far brought together. They show distinctly three types of operation.

The first is that in which a rectangular button was removed by means of four linear incisions made in parallel pairs intersecting at right angles. The incisions are narrow, v-shaped in cross-section, and gradually increasing in depth from ends to centre, thus indicating that the instrument was a pointed bit of stone or arrow-head held vertically and operated by reciprocal motion. This type of operation is rude and the resulting traumatism is jagged, each incision extending perhaps half an inch beyond the button at each extremity. There is no indication of the purpose of the operation of this type in any case, and nothing to suggest that if the operation was ante-mortem the individual survived.

In the second type of operation the incision was evidently made also by a rudely-pointed instrument, probably of stone, held vertically and moved reciprocally; but as the cutting reached and penetrated the inner table, the locus of incision was moved forward and at the same time the direction of the sawing was changed so as to produce a rudely-curved cut and, when two

¹ *Medical News*, April 14, 1894.

² *Bulletin of the Johns Hopkins Hospital*, vol. v, No. 27.

such incisions were made, an irregularly elliptical button.

The third type of operation was performed largely or wholly by scraping in such manner as to remove the outer table and diploë and reduce the inner table to a feather-edge. Some of the examples suggest that the scraping, which may easily have been effected with stone instruments and gives no indications of the use of metal, represents the final part of an operation begun by the curved incision. The deftness of the operators may be inferred from one specimen in which, although the skull is fully a quarter of an inch thick, the parallel incisions are not more than three-eighths of an inch apart. Several of the skulls show that the patient had survived one or even two trephining only to perish during a later operation.

The collection is of especial value as demonstrating certain points heretofore obscure, and warranting the following conclusions: (1) That the operation was ante-mortem, since five individuals out of the nineteen represented certainly, and two or three more probably, survived one or more operations; and (2) that the trephining was surgical. Two provisional conclusions of importance are also indicated by the collection: (3) that the operation was used in a medical way to relieve a general pathologic condition; and (4) that the operation was, as indicated by the total absence of marks of metallic instruments, anterior in date to the Spanish invasion and thus essentially prehistoric. Two of the crania are to be given to this country, one to the Bureau of American Ethnology and one to the Army Medical Museum.

THERAPEUTIC NOTES.

TO RENDER CASTOR OIL PALATABLE.—An ordinary dose of castor oil may be rendered odorless and tasteless by simply shaking it thoroughly in a flask with warm milk.

TREATMENT OF MEASLES BY EUCALYPTUS INUNCTION.—Dr. C. E. Shelly reports² the use of eucalyptus inunction in a series of cases of measles. The favorable reports of other observers were not confirmed. The total number of cases observed was seventy-three. Of these, five received the treatment by eucalyptus. Inunction was begun directly they came under observation, night and morning for three days, and subsequently once a day for the first week. Eucalyptus emulsion was given internally, some of the fluid was placed in saucers about the room, and when cough was troublesome eucalyptus inhalations were given. The results were not at all favorable. There was unusual drowsiness: "all five patients sleeping almost constantly, being aroused with some difficulty to take their food, and remaining awake only just long enough to consume it." All five had tongues thickly coated with white fur, contrasting markedly with the tongues of others under different treatment. The eruption of the rash was delayed in four of the cases and in all there was a relatively prolonged pyrexia. Convalescence was in all five cases more tardy than usual, and desquamation much more profuse. In general the symptoms "seemed to indicate an undue retention of morbid products, rather than that speedy and complete destruction of the infective poison which the advocates of this treatment claim as one of its special advantages."

² Practitioner, November, 1893.

Correspondence.

THE MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY LUNCHEON.

Boston, April 14, 1894.

MR. EDITOR: The following appears in your number of April 12, 1894: "The programme of the annual meeting of the Massachusetts Homœopathic Medical Society included a luncheon at the State Insane Hospital at Westborough."

I wish to say that the luncheon alluded to was paid for by the Massachusetts Homœopathic Medical Society, and not by the State Insane Hospital at Westborough.

Respectfully yours,

CHARLES R. CODMAN,
Chairman of the Board of Trustees of the
Westborough Insane Hospital.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 7, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.	
New York	1,891,806	850	339	17.76	18.38	7.92	2.52	3.00	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	440	146	12.58	10.41	6.21	2.07	1.38	
Brooklyn	978,394	400	181	18.75	18.75	7.00	3.50	2.25	
St. Louis	580,000	—	—	—	—	—	—	—	
Boston	487,387	222	66	8.10	16.20	3.60	1.35	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	139	56	10.06	23.76	2.16	.72	—	
Cincinnati	305,000	—	—	—	—	—	—	—	
Cleveland	290,000	108	49	15.64	11.98	1.84	4.80	4.60	
Pittsburg	283,708	—	—	—	—	—	—	—	
Milwaukee	250,000	73	16	22.39	15.07	6.85	—	6.85	
Nashville	87,754	24	9	8.32	4.16	—	4.16	—	
Charleston	65,165	32	8	6.26	3.12	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	36,217	26	11	16.00	20.00	4.00	—	4.00	
Fall River	37,411	—	—	—	—	—	—	—	
Lowell	37,191	34	11	2.94	32.34	2.94	—	—	
Cambridge	77,100	25	9	20.00	4.00	4.00	4.00	—	
Lynn	62,656	19	2	21.04	10.52	—	—	—	
Springfield	48,684	18	3	11.11	27.77	—	—	—	
Lawrence	48,385	—	—	—	—	—	—	—	
New Bedford	45,886	19	11	10.82	15.78	10.52	—	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	16	1	—	6.25	—	—	—	
Brookton	32,140	9	2	11.11	66.66	—	—	—	
Haverhill	31,398	13	6	—	15.38	—	—	—	
Chelsea	30,264	9	3	—	11.11	—	—	—	
Malden	29,394	7	0	14.28	14.28	—	14.28	—	
Newton	27,536	6	3	16.66	16.66	16.66	—	—	
Fitchburg	27,146	8	1	—	—	—	—	—	
Taunton	26,372	10	1	20.00	20.00	—	—	—	
Gloucester	26,668	10	3	10.00	—	—	—	—	
Waltham	22,068	3	2	33.33	—	—	33.33	—	
Quincy	19,642	6	2	—	—	—	—	—	
Pittsfield	18,802	2	1	50.00	—	—	—	—	
Everett	16,585	7	1	14.28	—	11.28	—	—	
Northampton	16,331	3	0	—	—	—	—	—	
Newburyport	14,073	6	2	—	—	—	—	—	
Amesbury	10,920	8	1	33.33	33.33	—	—	33.33	

Deaths reported 2,547: under five years of age 957; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 382, consumption 328, acute lung diseases 317, diphtheria and croup 147, scarlet fever 60, measles 51, diarrhoeal diseases 28, typhoid fever 26, whooping-cough 20, cerebro-spinal meningitis 15, small-pox 14, erysipelas 9.

From diarrhoeal diseases New York 11, Brooklyn and Milwaukee 4 each, Philadelphia, Washington, Cambridge and Taunton 2 each, Cleveland 1. From typhoid fever Philadelphia 7, New York 6, Milwaukee 3, Brooklyn and Boston 2 each, Washington, Nashville, Worcester, Cambridge, Springfield and Brockton 1 each. From whooping-cough Brooklyn 6, New York 5, Philadelphia, Cleveland and Nashville 3 each, Boston, Washington and Charleston 1 each. From cerebro-spinal meningitis Washington 5, New York, Cleveland and Lynn 2 each, Worcester, Somerville, Gloucester and Pittsfield 1 each. From small-pox Brooklyn 7, New York 5, Boston 2. From malarial fever Brooklyn 5, New York 4, Philadelphia 2, Springfield 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending March 31st, the death-rate was 20.0. Deaths reported 4,010: acute diseases of the respiratory organs (London) 347, measles 210, whooping-cough 158, diphtheria 96, scarlet fever 51, fever 46, diarrhoea 40, small-pox (West Ham 5, Birmingham 3, Bristol, Manchester and Oldham 1 each) 11.

The death-rates ranged from 12.2 in Portsmouth to 25.8 in Salford; Birmingham 20.0, Bradford 17.2, Bristol 14.5, Croydon 19.6, Halifax 21.3, Hull 18.4, Leeds 15.0, Leicester 19.8, Liverpool 24.5, London 20.8, Manchester 22.7, Newcastle-on-Tyne 21.2, Norwich 19.2, Nottingham 20.8, Plymouth 23.7, Sheffield 18.6, Sunderland 19.2, Swansea 16.9, West Ham 15.8.

METEOROLOGICAL RECORD.

For the week ending April 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.		Baro- meter	Thermom- eter.				Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. e		Rainfall in inches.
		Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S. 1		29.68	55	63	47	54	46	50	W.	N.W.	14	15	O.	O.	
M. 2		30.00	38	46	31	58	32	44	N.	N.	14	15	O.	C.	
T. 3		30.31	34	46	23	50	50	50	N.W.	S.W.	10	16	C.	C.	
W. 4		29.95	42	53	32	63	90	76	S.	S.W.	17	17	O.	R.	0.3
T. 5		29.86	52	56	47	74	59	66	W.	W.	18	12	C.	C.	6.1
F. 6		29.96	42	45	38	70	54	62	W.	N.	9	12	O.	O.	0.0
S. 7		30.16	41	32	30	47	55	51	N.W.	S.	10	15	C.	O.	
		29.99	49	35	30			63							0.4

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat-
ening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 7, 1894, TO APRIL 13, 1894.

Leave of absence for one month is hereby granted CAPTAIN OGDEN RAFFERTY, assistant surgeon, with permission to apply for an extension until the 20th of May next.

The following named officers of the Medical Department will report in person for temporary duty until further orders, as follows: FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, to the commanding officer, Angel Island, California. FIRST-LIEUT. CHARLES E. B. FLAGG, assistant surgeon, to the commanding officer, Alcatraz Island, California.

THE INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF HYGIENE.

The Ninth Exposition of Hygienic and Alimentary Products, under the auspices of this Society will be held at Rome, in June next, in the Palais des Beaux-Arts, under the Presidency of Dr. Baccelli, Minister of Public Instruction.

Authors and editors of publications relative to hygiene are requested to send copies of their works to M. Louis De Vriese, Administrator-General, Rue des Régnées 3, à Gaud, Belgium.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, April 25th, by Assistant Professor T. M. Rotch, at 8 o'clock. Subject, "Infant Feeding." Physicians are cordially invited.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, No. 19 Boylston Place, on Monday, April 23, 1894, at 8 o'clock, P. M.

Dr. A. Thorndike: "Acute Arthritis in Infants, in the Hip-Joint." Discussion opened by Drs. E. H. Bradford and H. L. Burrell.

Dr. G. H. Washburn: "An Interesting Obstetrical Case." Discussion by Drs. J. G. Blake, C. E. Stedman, E. Reynolds. JOHN T. BOWEN, M.D., Secretary.

THE BOSTON MEDICO-PSYCHOLOGICAL SOCIETY will hold its next meeting on Thursday evening, April 19, at eight o'clock, at

the University Club, 270 Beacon Street, Drs. Walter Channing, R. T. Edes, E. V. Scribner and C. E. Woodbury, entertaining.

The Society invites the Faculty of the Harvard Medical School and the Staffs of the Massachusetts General Hospital and City Hospital to be present.

Dr. H. M. Hurd, of Baltimore, will read a paper entitled, "Some of the Mental Disorders of Childhood and Youth."

Members are requested to inform the Secretary whether or not they can be present.

H. C. BALDWIN, M.D., Secretary.

PENNSYLVANIA STATE MEDICAL SOCIETY.—The annual meeting of the Pennsylvania State Medical Society will be held in Philadelphia, May 15, 16, 17 and 18, 1894. The annual addresses before the various sections will be given by the following gentlemen: "Medicine," W. S. Foster, M.D., Pittsburg; "Surgery," G. D. Nutt, M.D., Williamsport; "Obstetrics," E. E. Montgomery, M.D., Philadelphia; "Mental Disorders," T. M. T. McKennan, M.D., Pittsburg; "Hygiene," J. H. Wilson, M.D., Beaver; "Ophthalmology," Geo. E. de Schweinitz, M.D., Philadelphia.

RECENT DEATHS.

DANIEL E. MARSTON, M.D., died in Monmouth, Me., April 14th, aged fifty-eight years. He graduated from Bowdoin in 1859 and served in the army during the rebellion.

CORYDON C. FOID, M.D., for forty years Professor of Anatomy and Physiology in the University of Michigan, died at Ann Arbor, April 14th, aged eighty-one years.

JOSEPH H. WORKMAN, M.D., died April 15th, aged eighty-nine years. He was the first President of the Ontario Medical Council and was for twenty-five years Superintendent of the Toronto Asylum for the Insane.

SEBASTIEN DIDIER LHERITIER, M.D., died in Paris recently, aged eighty-five years. He was private physician to Napoleon III and a prominent member at the court during the Second Empire. He was inspector of the mineral springs at Plombières.

BOOKS AND PAMPHLETS RECEIVED.

Pernicious Malarial Fever. By George Dock, M.D., of Ann Arbor, Michigan. Reprint. 1894.

Charaka-Samhita. Translated into English and published by the Avinash Chandra Kaviratna. Part VII. Calcutta. 1894.

The Johns Hopkins Hospital Reports, Vol. IV, No. I. Report on Typhoid Fever. Baltimore: The Johns Hopkins Press. 1894.

Faradism as an Analgesic in the Loosening of Joint-Adhesions. By Douglas Graham, M.D., Boston, Mass. Reprint. 1893.

The Hospital at 24 McLean Street, A Statement of its History, its Managers, its Doings and the Result of its Work in 1893. The Sixty-first Year of the Boston Lying-in Hospital. Boston. 1894.

Lectures on Surgery. By David W. Cheever, A.B., M.D. (Harv.), Professor of Surgery, Emeritus, in the Medical School of Harvard University; Senior Surgeon of the Boston City Hospital, etc. Boston: Dammell & Upham. 1894.

Clinical Manual of the Study of Diseases of the Throat. By James Walker Downie, M.B., Fellow and Examiner in Aural Surgery for the Fellowship of the Faculty of Physicians and Surgeons, Glasgow. New York: Macmillan & Co. 1894.

Transactions of the American Dermatological Association at its Seventeenth Annual Meeting held at Milwaukee, Wis., on the 5th and 6th of September, 1893. Official Report of the Proceedings by George Thomas Jackson, M.D., Secretary. New York. 1894.

Gonorrhoea; Being the Translation of Blenorhoea of the Sexual Organ and its Complications. By Dr. Ernest Finger, Docent at the University of Vienna. Third revised and enlarged edition, with seven full-page plates in colors and thirty-six wood engravings in the text. New York: William Wood & Co. 1894.

A Manual of Practical Obstetrics. By Edward P. Davis, A.M., M.D., Professor of Obstetrics and Diseases of Children in the Philadelphia Polyclinic; Clinical Lecturer on Obstetrics in the Jefferson Medical College; Clinical Professor of Diseases of Children in Woman's Medical College, etc. Second edition, revised and enlarged, with 134 illustrations and 16 full-page plates, several of which are colored. Philadelphia: P. Blakiston, Son & Co. 1894.

Methods of Pathological Histology. By C. von Kahliden, Assistant Professor of Pathology in the University of Freiburg. Translated and edited by H. Morley Fletcher, M.A., M.D., Cantab., M.R.C.P., Casualty Physician to St. Bartholomew's Hospital and Assistant Demonstrator of Physiology in the Medical School. With an introduction by G. Sims Woodhead, M.D., Director of the Laboratories of the Conjoint Board of the Royal Colleges of Physicians (Lond.) and Surgeons (Eng.). London and New York: Macmillan & Co. 1894.

Original Articles.

OBSERVATIONS ON CASES OF FIBROID TUMOR OF THE WOMB.¹

BY FRANCIS MINOT, M.D.

In offering some remarks on the cases of uterine fibroid which have come under my notice, I do not pretend to advance any new views as to the etiology, the symptoms or the treatment of the disease. I shall chiefly allude to certain points in connection with its diagnosis, and to some of the symptoms which appear to me to be of interest, and to indicate their practical value.

It is remarkable that a structural disease of the womb, causing a considerable enlargement of the organ, sometimes giving rise to an annoying disfigurement, especially if the patient be unmarried, and generally accompanied by a more or less profuse hæmorrhage which often lasts for years, should in many cases not only be free from danger to life, but that it should often interfere but little with the occupations and the comfort of the patient.

I regret that out of a large number of patients with fibroid tumor, who have come under my observation during a practice of forty years, I have preserved sufficiently detailed notes to be of value in only thirty-four cases. Of these, the number of patients who were, or who had been married, is twenty-one, their average age being thirty-six years. The oldest patient was fifty-two years; the youngest, twenty years old.

The age at which the first symptoms of the disease appeared in twenty-six cases of which trustworthy statements could be obtained, varied from twenty years to fifty-two years. Arranged according to decades, the first symptoms were noticed:

Between the ages of 20 and 30	. . . . .	in 10 cases
Between the ages of 30 and 40	. . . . .	in 13 cases
Between the ages of 40 and 50	. . . . .	in 2 cases
Between the ages of 50 and 60	. . . . .	in 1 case

In one case the first symptom appeared at the age of twenty years and two months; in another at twenty-two years; in another at fifty-two years. The average age was about thirty years. So far as this small number of statistics goes, it appears that the social state has but little influence in the etiology of uterine fibroid, and that the disease may appear at any period of life after twenty, perhaps most frequently between thirty and forty, and either in single or married women.

The diagnosis of uterine fibroid is in many cases comparatively easy. The combination of profuse menorrhagia, often passing into metrorrhagia, with a hard tumor connected with the uterus and felt through the abdominal wall, is usually enough to remove all doubts as to the disease. Both of these symptoms, however, may be absent.

(1) There may be absolutely no menorrhagia, or the flow may amount to no more than is often observed in patients who are free from uterine disease, as in the following case:

A lady, twenty-eight years old, single, was brought to me March 11, 1873, by her physician, in consequence of a feeling of distention in the abdomen and the discovery of a tumor in the left iliac region. There was no menorrhagia. A large, rounded tumor occupied the left pubic region, extending nearly to the

navel, and a little to the right of the median line. It was irregular, but not distinctly lobular, cervix uteri very low, just beneath the pubes. The posterior region of the pelvis was filled by the tumor, as was evident by rectal examination. The tumor was somewhat movable above. August 17, 1893 (more than twenty years afterwards), the patient's physician wrote to me: "There has been occasionally some increase of menstrual flow, but never amounting to excess; she is nearly reduced to her natural size, is in fair condition and enjoys life."

April 29, 1875, I saw in consultation with the late Dr. D. H. Storer, a patient with a "large uterine tumor, divided into several distinct lobules, distending the abdomen as much as a pregnant uterus at the fifth or sixth month; no hæmorrhage; no pain."

The first symptom noticed may even be a suppression of the menses. A young woman, twenty-one years old, was brought to me by the late Dr. Snow of Newburyport, August 14, 1888. She had had no catamenia since the previous November. In all other respects her health had been good. There had been progressive enlargement of the belly. The abdomen was distended by a smooth, hard tumor, occupying its lower half, which was found by bimanual examination, to be connected with the uterus. The navel was nearly obliterated, as in pregnancy at the eighth month. No foetal heart-beat and no placental murmur could be heard. The breasts were virginal in appearance, the hymen was intact, ballottement gave no evidence of pregnancy.

(2) As regards abdominal tumor, we must remember that this is usually absent in uterine polypus unless the latter be extremely large; and if there be no hæmorrhage, it might not be suspected. I saw, with the late Dr. A. B. Hall, June 21, 1868, a mulatto woman forty years old, who for a year previously had complained of uneasy sensations in the pelvis and a profuse vaginal mucous discharge. There was no hæmorrhage, and no abdominal tumor could be felt, but the vagina was completely filled with a firm mass, connected with the interior of the uterus by a pedicle one inch thick. The pedicle was severed close to the uterine wall with scissors, and the tumor removed with very little loss of blood. It was an ordinary fibroid, about the size of the fist. The patient did well.

An intro-mural tumor may be so small as not to be felt, either by external or internal examination, and yet give rise to much hæmorrhage. Several years ago a domestic in the family of Dr. Davidson of Gloucester, twenty-eight years old, married, had had for more than a year abundant and frequent uterine hæmorrhages. There was no tumor to be felt by Dr. Davidson, who accordingly dilated the cervix uteri with sponge tents, and detected a tumor in the uterine wall apparently about the size of a boy's marble. He sent her to the Massachusetts General Hospital, where the tumor was removed. It was an ordinary fibroid, "as large as a very large horse-chestnut." The patient did well.

The diagnosis of uterine fibroid may be obscured by the prominence of symptoms which are not characteristic of that disease. May 24, 1889, I was called to see a nursery-maid, thirty-six years old, who had always enjoyed good health. Menstruation rather free, but otherwise normal. She had never had any bladder trouble before, but on that day, on rising, she was unable to make water. After breakfast she had a movement of the bowels, as usual, but still could make

¹ Read before the Obstetrical Society of Boston, February 10, 1894.

no water. Although feeling uncomfortable, she took one of the children to school. In the course of a few hours, the discomfort amounted to distress, in which condition I found her at three o'clock P. M., and drew off with a catheter about two quarts of urine without any difficulty, and a tumor was felt, *per vaginam*, nearly filling the pelvis. Externally, the tumor was felt occupying nearly the whole of the supra-pubic region, and extending halfway up to the navel, with a projection towards each flank. April 11, 1890, nearly a year afterward, I was called to see her again for the same difficulty, and drew off about three pints of urine. During the interval between my two visits she had had no difficulty in micturition. She had had no unusual fatigue, and no exposure to cold. Since my previous visit, the tumor had extended upwards as far as the navel, and also downward in the pelvis; the os uteri was low down and closed, and the cervix was obliterated. The catamenia were regular, profuse, lasting eight or nine days. Quite recently I have been informed that the patient has had no farther recurrence of the bladder difficulty, and is in good health.

Urgent urinary symptoms have been comparatively rare in cases of uterine fibroid under my observation, but in several instances there was more or less irritability of the bladder; several patients complained of painful and frequent micturition. One case was complicated with pelvic inflammation and cystitis. One patient had frequent micturition day and night. In another case, the first symptom noticed was frequent micturition; the patient made water every few hours during the day, and several times during the night. There was no pain in the act, but much pain if she was compelled to hold her urine long.

Interference with the functions of the rectum was reported by none of the patients of whose cases I have preserved notes.

The diagnosis between fibroid tumor of the womb and pregnancy is generally easy, though not always so, and it is hardly necessary to say that the most careful examination should be made in such cases before giving an opinion which might compromise the reputation of a patient. I have already mentioned the case of an unmarried woman whose external appearance, caused by a large uterine fibroid, was strongly suggestive of pregnancy. Another case was that of an unmarried lady, a teacher of a young ladies' school, who consulted me on account of the disfigurement caused by a large fibroid of the womb.

Cases of fibroid complicated with pregnancy are not very rare, and it is remarkable that the latter is often not interfered with, that the labor may be attended with no serious difficulty, and the child be born alive. In April, 1876, I saw with Dr. Winslow of Groton, a lady who, four weeks previously, had been confined at full time, the child being alive and well at the time of my visit. There had been some delay in the passage of the head, which was found to be caused by a fibroid growth of the size of the fist, attached by a pedicle to the posterior wall of the uterus. A few days after the labor, the patient was attacked by phlebitis of both arms and one of the legs, and she died a week after I saw her, but there seemed to be no connection between the presence of the tumor and the phlebitis.

In March, 1887, I saw a lady who had been married somewhat over a year. A short time before her marriage (the menstruation having always been remarkably regular, without pain, and normal in amount),

she had noticed a tumor in the abdomen, which had remained of the same apparent size ever since. The last appearance of the menses was about three months before my visit, and the patient exhibited the usual subjective and objective symptoms of pregnancy. The tumor was smooth, rounded, hard, not tender, and was situated above the right pubic ramus, towards the iliac fossa. The upper margin was about three inches below the navel. It was somewhat movable, and was connected with the womb, as was shown by bi-manual exploration. The patient was a stranger visiting Boston, and I have not heard of her since.

Fibroid tumor of the womb may, of course, give rise to abortion. A woman twenty-six years old, who had been married eight months, consulted me January 10, 1879. She had never had menorrhagia, though frequently dysmenorrhœa, before marriage. Twice since marriage, she had suspension of the catamenia for one or two periods, followed by hæmorrhage and the expulsion of a mass. In the left iliac region was a round, hard movable body of the size of a horse-chestnut, and a large tumor occupied the left side of the pelvis, reaching as high as the brim, connected with the uterus and with the smaller one. There was no external enlargement from the tumor.

Of the symptoms connected with fibroid disease of the womb, perhaps the most serious, certainly the most rebellious to treatment and the most annoying to the patient, is metrorrhagia. Patients are sometimes encouraged to believe that after the period of the menopause, there will be a permanent suppression of the hæmorrhage. This, no doubt, often occurs, but in my experience there have been several exceptions to the rule, and I have at present four such under my observation. A remarkable feature of the symptom, in many cases, is its capricious behavior. It may long resist treatment, and then, after treatment has been abandoned, it may cease spontaneously for years, only to return again, to the despair of the patient and of the doctor. In two cases which have been under my observation for many years, there have been intervals of complete suspension of hæmorrhage lasting in one patient, for eight years, and in the other for two years, apparently not due to treatment; but in each there was a subsequent return of the bleeding. In some cases, the hæmorrhage is replaced by a profuse serous discharge, which is hardly less annoying to the patient.

As a rule, the treatment for hæmorrhage from uterine fibroids is unsatisfactory. It is rarely that a patient is cured, though in many cases, an arrest of the bleeding for a longer or shorter time may be obtained. Among the various remedies which have been recommended, ergot has the highest reputation. It will often check the hæmorrhage temporarily, but I have not met with an instance of cure following its use, unless in patients who have nearly reached the period of the menopause, when there is in many cases a spontaneous cessation of the flow. Chian turpentine has also in my hands proved a valuable remedy, perhaps superior to ergot, but I have not had enough experience in its employment to be sure of this. To be of any use, these remedies must be given in full doses and several times a day.

We should suppose that restriction from active exercise would be essential in the treatment of the hæmorrhage, but two of my patients assured me that exercise had no effect in increasing it. One of them had spent several weeks in the Adirondacks, during which

time she not only took long walks, but did a good deal of mountain climbing, without any unfavorable effect. She is forty-eight years old, and has had a large tumor for many years, with, at times, profuse hæmorrhage, which has not yet wholly ceased.

As to the treatment of the anæmia and debility, which are the results of the long continued loss of blood, I have nothing to say which would justify me for trespassing any longer upon your attention.

The surgical treatment of uterine fibroid has until lately been rarely attempted, on account of the large mortality which attended it; but the great improvements in abdominal surgery which have accompanied the adoption of antiseptic methods, justify the hope that many cases of this disease in which life, even if not in actual danger, is an almost intolerable burden, may be permanently relieved by such means.

THE NON-SURGICAL TREATMENT OF CHRONIC PELVIC INFLAMMATIONS AND THEIR SEQUELÆ.¹

BY F. H. DAVENPORT, M.D.

SOME of the most perplexing problems in gynecology are the common ones which meet us in the course of our every-day practice. There are, of course, the grave cases where the physician is called upon to decide the question of an operation involving life and death, but these, fortunately, are rare. On the other hand, the majority of the cases we are called upon to treat are of such a nature that the appropriate methods of treatment suggest themselves, and the consensus of medical opinion, justified and backed up by experience, approves the choice. The retroversion is rectified, and the displaced organ held comfortably in its normal position by a pessary. The lacerated cervix, causing a long train of local and general symptoms, is sutured, and the troublesome symptoms gradually disappear. The rupture of the perineum which has destroyed the integrity of the pelvic floor is repaired, with gratifying result. A uterine polypus is snipped off, and a troublesome, perhaps dangerous, hæmorrhage is instantly checked.

These are familiar examples of that class of cases where the trouble instantly suggests the appropriate measures for its relief. They are the most satisfactory to the physician and the patient as well.

Between these two sets of cases occur in moderate frequency those where there is no well-recognized line of treatment, and where the consultant is obliged to choose, out of a large variety of therapeutic measures, that which seems best adapted to the case, with the hope that it may afford some measure of relief.

These rather trite general considerations have been suggested to my mind by my experience in the last few years in the treatment of the secondary results of chronic pelvic inflammations. Not that I feel that I can claim any new or royal road to success in such unpromising cases, but with enlarged opportunity and experience one unconsciously weeds out what seems superfluous, and in following large numbers of cases for a length of time, can estimate final results with a more unprejudiced mind. It is also with a hope of learning from other men what they have found of value in such cases that I have ventured to discuss this rather threadbare subject.

And, first, I would like to define as clearly as I may what I mean by chronic pelvic inflammations and their sequelæ.

Pathologically, we can in general say that the starting-point is some more or less extensive localized pelvic peritonitis. As a consequence of this, we have adhesions between the layers of the peritoneum investing the pelvic viscera, resulting in displacements and thickenings. These processes may be so extensive that the whole pelvis is affected, or they may be confined to one side, or to a single limited area of one side. Thus the uterus, ovaries, tubes and anterior wall of the rectum may be so matted together that they form one mass, in which the various organs are indistinguishable by bimanual examination, or there may be present but a single thickened point to mark the presence of a former inflammation. These are the cases which ten and fifteen years ago were all classed under the head of pelvic cellulitis. We now recognize that they are the effects of a localized pelvic peritonitis, the cause of which may be obscure, but which in the majority of cases is the result of the extension of some inflammatory process from the uterus through the tubes to the peritoneum. Gonorrhœal abortions, septic processes, the result of meddlesome or uncleanly treatment, or trauma, are the most common sources of such affections. While adhesions are the most evident results of the peritonitis, yet the uterine, tubal and ovarian conditions which precede or accompany the peritonitis go to make up the complete pathological picture, and may be considered as part of the disease to be treated. It is the general condition of the whole pelvic organs, the congested uterus, the catarrhally-affected tube, the adherent, prolapsed ovary, and the thickened, glued-together layers of the peritoneum, which I consider under the title of chronic pelvic inflammations and their sequelæ.

As a rule, these women come to us only when their symptoms have existed so long and have become so burdensome that relief is imperative. I need not go into a detailed account of the symptoms complained of. They are those common to the majority of pelvic lesions, and there is nothing pathognomic among them. Even a history of any acute attack is often wanting. In a general way they are: pain of all varieties and degrees of intensity, menstrual disturbances, leucorrhœa and reflex functional disorders. To attempt to describe them in detail would be to give a list of almost all the possible ills that "flesh is heir to."

On examination, what do we find? Very often there is so much sensitiveness that our examination is very unsatisfactory. We may find, and perhaps this is as common a condition as any, a congested, sensitive uterus in a position of retroversion or flexion, partially fixed or quite immovable, and very probably the seat of a catarrhal endocervicitis. In the neighborhood, either at the sides or behind, are sensitive swellings. What these are it is usually impossible to say at our first examination, for the extreme sensitiveness precludes all possibility of making any differential diagnosis.

Such is the clinical aspects of these cases, and such the anatomical condition as far as our examination can reveal it. I purposely in this paper exclude pyosalpinx, believing that for that condition palliative measures rarely are sufficient, and that the line of treatment to be outlined later has in it an element of danger.

¹ Read before the Obstetrical Society of Boston, February 10, 1894.

Suppose such a patient presents herself for treatment, and on examination we find the complex conditions which I have described. All that we can say certainly is that the uterus is displaced backwards and bound down, and that in the immediate neighborhood there are sensitive swellings. In the absence of direct evidence that we have pus tubes or ovarian or parovarian tumors to deal with, I claim that our prognosis, though guarded, should not be discouraging, and that our treatment should be conservative.

As the main obstacle to a more accurate diagnosis is the sensitiveness, our first efforts should be towards overcoming this. No agent has proved half so efficacious in my hands towards this end than glycerine. The hot-water douche cannot begin to compare with it in efficacy, first, because the principle on which it acts is not the correct one, and second, because its effect is not so lasting. The douche, by contracting the blood-vessels, drives the blood out of the parts, to be sure, but probably acts only on the surface and a short distance below it, and fails to reach the deeper tissues. Glycerine, from its affinity for water, draws from the blood-vessels the serum, and thus, by directly unloading those in the immediate vicinity, promotes a more regular and natural circulation in the part. To accomplish this end, however, a large amount of glycerine must be used, and in such a way as to be easily borne. For this purpose I use a prepared wool, which has the great advantage over cotton that it is very elastic, does not mat, and will hold a large amount of glycerine in its meshes. This I roll up into such a sized tampon as will suit the case, tie a string about it, and thoroughly soak it in glycerine. Such a tampon will need half an ounce to do thoroughly good work. I place this in the vault of the vagina, and direct the patient to wear it for forty-eight hours if it is comfortably borne. If it becomes uncomfortable, she may remove it and take a douche.

A tampon of this size will usually cause enough watery discharge to necessitate the use of from four to six napkins in the first two days. The discharge then usually stops, and the tampon ceases to be of use except as a moderate support. The fact that it is of some value as a support is a second respect in which it is of more advantage than the hot-water douche.

The third day I repeat it, and each third or fourth day until the sensitiveness is diminished enough to admit of the second step in the treatment.

Painting the vault of the vagina with Churchill's iodine is of considerable value as a secondary means of relieving pain and congestion. I have, however, found ichthyol much more effective as an analgesic, and it can be very conveniently combined with the glycerine treatment. A small wool tampon soaked with a mixture of ichthyol and glycerine, one part to eight, is first placed against the cervix, and the larger tampon inserted after it. I cannot say that I have observed the melting away of inflammatory products under the use of ichthyol which have been reported by some writers, but its effect on pain has been very marked.

The second indication for treatment is to restore the mobility of the uterus, and to stretch or break up the adhesions. This can only be attempted after the sensitiveness has been materially lessened. The method may be conveniently described as consisting of two steps: first, putting the adhesions on the stretch, and second, keeping them so. In the first place, I would

warn against the use of the sound or any repositior to replace the uterus. Such an instrument used for such a purpose is uncertain and dangerous. There is no better or safer repositior than the finger. In order to bring the adhesions on the stretch, the anterior lip of the uterus is seized with the double tenaculum and moderate traction made on it, while one or two fingers of the left hand, inserted into the posterior cul-de-sac, gently lift the uterus and carry it forward. In this way the adhesions can usually be felt or the inflammatory swellings palpated. A very effective massage may now be practised, of short duration, but with gradually increasing force, gently putting the tight bands on the stretch, or rubbing the hard masses with the tips of the fingers. I lay great stress in the treatment of these conditions on this lifting and massage of the uterus, and the inflammatory products in its immediate neighborhood. I am confident that I can get good results in much less time than I could formerly by packing alone.

When the uterus has been raised as much as is safe, the vagina is then thoroughly packed, just as firmly as the patient can bear, and the tampon left three, or at the most, four days. I usually pack a second time before repeating the lifting and massage, as it is apt to cause sensitiveness if it is repeated at too short intervals.

There will come a time in the treatment of some of these cases when further attempts at restoring the uterus to its normal position seem useless. The adhesions are too firm to be separated, and though there is some improvement, yet the pelvic conditions are not yet normal. Sometimes the uterus is still retroverted and the inflammatory thickenings still prominent. To suspend treatment here is to lose all we have gained, and the most satisfactory way to prevent a return to the former condition is the use of a pessary.

Two or three years ago my attention was called to an article in the *American Journal of Obstetrics* for 1891, by Dr. Sarah E. Post, on the use of the inflated ring-pessaries, and as their principle seemed to me to be a good one for the class of cases which I am now describing, I determined to adopt it. I came to the conclusion, however, after a short trial, that the solid elastic rings of large calibre, did better than the inflated pessaries, as giving more efficient support, and not causing trouble by gradually collapsing. These rings come of several sizes. There are two varieties, the solid rubber ones, and those composed of a spiral spring covered with rubber. The former are very much to be preferred, as after having been used a while the latter become wrinkled, and are apt to cause irritation.

I have found this pessary of great value in these cases. In the first place, it supports and elevates the uterus. This it does without causing as much pressure on any particular part of the vaginal vault as do the pessaries constructed on the Hodge model, which are very apt to press on just the most sensitive points; nor does it push the uterus up quite so high as the others, which in an adherent uterus is an advantage. It also relieves pain by immobilizing the organ to a certain extent, and yet allowing more freedom of motion than a Hodge. It encircles the cervix with a firm, elastic pressure, and while yielding perfectly to the natural movements of the uterus, it prevents any sudden jar from dislocating the organ too much. A second factor in relieving the pain has to do with the circulation of

the uterus. The even pressure around the cervix and upwards must to a certain extent equalize and regulate the blood-supply, and so favor the relief of the congestion. This will in turn diminish the sensitiveness of the nerves.

Not the least beneficial effect of this pessary is seen in the changes which gradually take place in the pelvic tissues themselves. Wearing it has resulted in, to a degree, restoring the mobility of the uterus, improving its position by thinning and stretching bands of adhesions, rendering sensitive swellings smaller and less sensitive, and reducing the size of the womb itself. This result had followed too often to be a chance coincidence, and I now confidently expect these results to a greater or less degree in all suitable cases. Examination from month to month will show a gradual improvement in the condition of the pelvic organs, which goes hand-in-hand with such an amelioration of the patients' general health that they call themselves practically well.

This *résumé* of my method of procedure in this class of cases, the wool-glycerine tampon, ichthyol, massage and packing, and finally, the cushion-pessary, does not, I confess, compare in brilliancy with the well-known surgical procedures which are advocated for this type of gynecological cases, but I claim, first, that where doubt exists as to the true condition of the pelvic organs, this method clears up the diagnosis, and in a majority of cases, and I speak advisedly, renders an operation unnecessary; and second, that the results obtained are sufficiently gratifying to render the prognosis less grave than is often supposed.

By way of illustration, I propose to give briefly the histories of a few cases in which this line of treatment has been carried out either in part or wholly.

CASE I. Mrs. B., thirty-five years old, was brought to me in December, 1891, by her physician, who had treated her for an obstinate retroflexion for a long time. She had had one child six years ago. Her principal complaints were great pain and soreness in the lower abdomen and back, especially the coccyx, dysmenorrhœa, irritable stomach, severe headaches and inability to take much exercise. Her physician had tried to relieve her symptoms, and to replace the uterus by applications and tampons, but without success. I found a heavy, retroflexed uterus only moderately movable, a slightly-lacerated cervix and a sunken perineum. Behind the uterus were several round bodies, about the size of a filbert, which were exquisitely sensitive to the touch, and which I took to be swollen glands. Any attempt to raise the uterus bi-manually was accompanied by so much pain from pressure on these bodies that it had to be abandoned. So, too, the wearing of a retroversion or flexion pessary was impossible.

After a little preliminary packing I adjusted a cushion-pessary, which gave her more relief than anything else. She has now worn that for about six months, and lately has been able to take care of it herself. The last time I saw her there was a most marked improvement in the condition of the pelvic organs. The uterus was much more movable, and could be raised nearly to its normal position, the sensitive bodies behind in Douglas's cul-de-sac had nearly disappeared, and she is now ready to have the cervix and perineum repaired.

CASE II. Mrs. B., twenty-seven years old, consulted me in July, 1891, for menorrhagia and dysmen-

orrhœa. Six years previous to my seeing her she had jumped from the box of a stage-coach to the ground, which was followed by an attack of pelvic peritonitis which confined her to bed for six weeks. After her recovery from the acute attack she suffered from severe pain at her monthly periods and profuse hæmorrhages. Her general health, especially as regards her nervous strength, had begun to suffer. She had never had any local treatment. Examination showed a firmly adherent, retroverted uterus, cul-de-sac partly obliterated by thickened tissue, and yielding very little to pressure by the finger. As she expected to be married in a month or two, no treatment was begun for about six months. Then tampons, packing and iodine were used for some time, and a Meigs ring was finally inserted. The improvement was most marked, both as regards her symptoms and the condition of the pelvic organs. The uterus, while still in the first degree of retroversion, was smaller and the adhesions less firm, allowing considerable mobility. Two years after marriage she miscarried at two months. A second pregnancy has resulted happily in the birth of a child last December.

CASE III. Miss C. first consulted me in 1888. Was twenty-one years old. Had a fall when eleven years old, since which time has suffered from a lame back, pain in back and right groin, headaches, delayed menstruation, usually five weeks, but occasionally going from three to six months, dysmenorrhœa lasting from half a day to a day, leucorrhœa and depression of spirits. She was wearing a pessary when she came to me, but I found the uterus retroflexed over the top of it, and apparently adherent. The right ovary was enlarged and sensitive and prolapsed. She had consulted one of the most eminent gynecologists in New York, who had advised removal of the tubes and ovaries. After packing firmly for a month, although the uterus was not thoroughly forward, a bulb pessary was introduced, to be worn during the catamenia. This proved so comfortable that she wore it all summer. In September the uterus was in a position of right lateral flexion, a position that I have often observed an adherent uterus assume as it changes from a backward position to the normal. Sometimes, as in this case, it remains drawn to one side. In March, 1889, she married, became pregnant in June, and is now the mother of three children.

CASE IV. Miss M., thirty-three years old, had been well until two years ago, when, after running a heavy machine, she began to suffer with a feeling of pressure and darting pains in the rectum, and a feeling of heat in the lower part of the back. She also suffered from leucorrhœa. She was unable to work on account of the pain in her back. I first saw her October 18, 1892, and found the uterus retroverted and tightly bound down by adhesions, some of which, especially on the right side, could be felt as strong bands. Three weeks' treatment by firm packing and raising the uterus manually brought the uterus into fair position, though one strong band of adhesion on the right failed to give way. A cushion-pessary was introduced, and by January she was able to resume work. She still is wearing the support, and there is steady improvement in the mobility of the fundus, and the adhesions grow more defined and thinner.

These cases may, perhaps, be considered typical of the class in which I have found the treatment I have outlined of benefit. As I said at the outset, there is

no new principle involved, but possibly the particular application of these various remedial agents may be suggestive. It will, at any rate, emphasize what may be called the conservative way of looking at the treatment of pelvic inflammations and their results.

THREE CASES OF OCCLUSION OF THE SUPERIOR MESENTERIC ARTERY.¹

BY W. T. COUNTELMAN, M.D.,

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THE cases which I present to-night are not only interesting in themselves, but show the tendency of rare pathological conditions to occur in groups. All of the autopsies were made within the last two weeks, and they are the first specimens of the sort which I have seen for a number of years.

CASE I. The first specimen which I shall show comes from an autopsy made for Dr. J. L. Hildreth. The clinical history of the case is as follows:

Mrs. X., aged eighty-five. Although feeble for a number of years, the general health was fairly good with the exception of attacks of bronchitis at intervals. Twelve days before death she had not been feeling well, and went to bed somewhat earlier than the usual hour. She was not able to sleep, and called an attendant at ten complaining of pain in the bowels. The pain became more intense, and Dr. Hildreth first saw her at 2 A. M. At that time she was restless, complained of intense pain in the bowels; pulse 70. No physical signs could be made out either in chest or abdomen. The pain was referred vaguely to the right iliac fossa. An opiate was administered, and repeated until pain was allayed. In the morning the pain returned in the same place. A large enema was given, which produced no results. There was no passage of flatus from the bowels. The abdomen became more distended, and the pain seemed localized in the right iliac fossa. At the end of the third day the condition continued the same. No vomiting. The temperature 1° sub-normal. Dr. Marcy, of Cambridge, saw patient in consultation on the fourth day. Diagnosis made of complete obstruction of bowels. An operation was suggested, but not urged. All of the symptoms continued until the seventh day when the temperature was 2½° sub-normal. From this point the temperature gradually arose, and before death reached 2° above normal. Vomiting commenced on the fourth day before death, finally becoming fecal. The pulse became quicker and weaker, and death took place twelve days after the first attack.

At the autopsy the abdomen was greatly distended. The intestines were enormously distended and somewhat congested. In the lower lobes of both lungs and in the posterior portions of the upper lobes there were numerous areas of consolidation. The pleura over these portions of lung was covered with a fine fibrinous exudation. The consolidation in the upper lobes had a distinctly lobular distribution. In the lower lobe of the left lung the consolidation was more extensive, but here, also, was apparently produced by the confluence of smaller foci. There was extreme fatty degeneration and atrophy of the heart and extensive atheromatous degeneration of the aorta. The heart was perfectly flaccid and so soft that the finger could be thrust

through the ventricle at any point. The entire abdominal aorta was covered with flakes of calcification. On these rough, calcified plates there were numerous thrombi. The most extensive thrombus was on the anterior surface of the aorta just above the origin of the superior mesenteric, and almost completely occluded the opening of the artery. The thrombus extended for a very short distance into the artery, but the artery itself was free from both emboli and thrombi. The small intestine was greatly distended, and in places there were a few small ecchymoses; but there was neither intense congestion nor at any point complete infarction.

In this case it seems probable that the partial occlusion of the artery by the thrombus in the aorta was, in the weakened condition of her circulation, sufficient to cause entire paralysis of the bowel and obstruction from this reason.

Cultures made from the tissues gave pneumococci in the consolidated portions of the lung; in the spleen and in the liver. In all of the organs colon bacilli were found.

CASE II. The clinical history of this case, of which the heart, aorta and mesentery were shown, is this:

R. T., aged sixty-one. Entered hospital January 19th. Complained of pain in left foot and ankle. The parts were much swollen, cold and blue. Three days afterwards the right foot showed the same process. Two days before death complained of pain in abdomen, pulse gradually sank and death took place.

At the autopsy the intestines were found enormously distended. The peritoneum was covered with a fibrino-purulent exudation, which in places produced a slight adhesion of the loops of the intestine. Pockets of pus were here and there found between the adherent loops of intestine. The entire small intestine was deeply injected and in the jejunum for a distance of about sixty centimetres the wall was greatly thickened and hæmorrhagic. In endeavoring to discover the cause of the peritonitis all the ordinary sources could be excluded. There was no evidence at any point of intestinal perforation. The mesenteric artery, however, was seen to be completely occluded by a thrombus about half-way between its origin and the intestine. This thrombus was firmly adherent to the wall and was totally occlusive. Beyond the thrombus there was a short space in the artery which was filled with a soft, dark coagulum, and further up, just opposite the area of intestine which shows the hæmorrhagic infarction and at a point in the artery where three branches are given off together, there was another thrombus which was also firmly adherent. On opening the intestine it was seen that on the mucous surface, in addition to the infarction, there were areas of distinct necrosis — some of these areas passing through the intestine. The source of the thrombus masses in the artery was evident from an examination of the aorta just above the heart. Here a roughened, calcified plate on the intima of the artery was seen, and adherent to this was a large thrombus. The thrombus in the aorta was evidently of a rather old date. In the kidney and in the spleen there were numerous infarctions produced by emboli. Some of these infarctions were anæmic, others hæmorrhagic. In some of them there was organization of the anæmic territory with cicatrization.

In both lower extremities, more marked on the right side, there was gangrene extending nearly up the knee. No line of demarcation as yet produced. The parts

¹ Specimens of these cases were shown at a meeting of the Boston Society for Medical Improvement.

were swollen, red, infiltrated with bloody fluid, large vesicles beneath the epidermis, and in places on the calf of leg the epidermis had desquamated. The arteries of both extremities occluded by thrombi. On the right side the thrombus extended up to the middle of the femoral artery; on the left side up to the popliteal. The occluded arteries were smooth, the thrombi tightly adherent.

On microscopic examination of the peritoneal exudation, colon bacilli were found in large numbers, and cultures from the peritoneum and from the other organs showed a general infection with colon bacilli. No other organisms were present in the cultures.

This case is of interest from the extent of the embolism, and also as showing peritonitis certainly produced by the colon bacilli, with a general infection of the other organs. From the examination of the intestine and the superior mesenteric artery, it would seem probable that there were here two emboli of different dates. The embolus towards the end of the artery, corresponding to the area of beginning hæmorrhagic infarction and necrosis, is evidently of older date than the one occluding the artery nearer its origin.

CASE III was from an autopsy in the Massachusetts Hospital for which I am indebted to Dr. W. F. Whitney. The clinical history is as follows:

A. B., seaman, aged sixty-two. At age of twenty, in bed for six months with general muscular tenderness and inability to use arms and legs. During this time there was some dyspnoea and slight palpitation. Since then he has had many similar painful attacks, but no cardiac symptoms until six months ago, when there was a sense of constriction in the region of the heart and marked shortness of breath. This condition increased constantly, and finally compelled him to cease work. Orthopnoea and anasarca then appeared, and have existed for the last month. When he entered the hospital the skin was somewhat jaundiced, and the respiration had at times the general Cheyne-Stokes characteristics. Four days later the abdomen became quite tender. On the following day the tenderness increased, and frequent loose stools occurred. There was hæmoptysis with physical signs of consolidation, and the pulse became very rapid and irregular. Four days later death took place. The abdominal pain and diarrhoea, with some elevation of temperature, persisting until the end.

I showed the mesenteric artery, with a portion of the intestine, from this case. Almost the entire small intestine was in a condition of hæmorrhagic infarction. The bowel contained a thin hæmorrhagic fluid; the walls of the intestine were greatly thickened from hæmorrhage. On the peritoneal surface of the intestine everywhere there was a very slight fibrinous exudation. The mesenteric artery from its beginning was entirely occluded by a thrombus. The source of the thrombus was not definitely made out. The heart was greatly enlarged. The aorta dilated, roughened, and the aortic valves relatively insufficient. It is probable that the thrombus in the mesenteric artery was of embolic origin, and came from a thrombus which had formed in the roughened aorta.

These cases are all of interest. In the first the clinical picture was that of obstruction without peritonitis. In the second there was a marked peritonitis and in the third only a slight beginning peritonitis. The cause of the peritonitis in the second case was evidently due to the colon bacillus. It is not necessary

to have an ulceration of the intestine or perforation in order for this organism to enter into the peritoneal cavity or into the tissues. There is no organism so commonly found in cultures from the various organs as is the colon bacillus. It is found in disturbances of the circulation of the intestine, such as is given in extreme chronic passive congestion. The resistance of the tissue in these cases is apparently so lowered that the organism finds entrance into the tissues. In all cases in which there are lesions of the mucous membrane of the intestine, it matters not how slight in character, the tissues will be invaded by this organism. In the second case in which there was marked peritonitis, the bacillus apparently found suitable conditions for growth in the necrotic tissue of the intestine, and it evidently passed through, or grew through, the intestinal wall into the peritoneal cavity. In a case which I autopsied at the City Hospital lately, there was a general fibrino-purulent peritonitis of slight degree in which the colon bacillus was found to be the only organism both in the peritoneal cavity and in the cultures. The source of the peritonitis in this case was in a small area of the intestine which had been incarcerated in a hernia. In the incarcerated portion of the intestine there was intense congestion with slight necrosis of the mucous membrane.

Hæmorrhagic infarction of the intestine resulting from obstruction of the mesenteric artery is an extremely interesting condition. In spite of the size of the mesenteric artery and in spite of the angle in which it leaves the aorta, which would appear to favor the entry of emboli into it, large emboli appear to be extremely rare. It is probable that small emboli frequently do enter the artery, but from the character of the circulation of the intestine and the abundant anastomosis which are found between the small branches of the artery, these small emboli produce no harm. The superior mesenteric artery is in no way a terminal artery in the sense of Cohnheim. There are numerous anastomoses, not only between the very small branches, but with the gastro-duodenal and inferior mesenteric. The area of tissue supplied by the artery, and the extreme length of the intestine are unfavorable for the development of a sufficient collateral circulation. In the dog, tying of the superior mesenteric near its origin always produced complete hæmorrhagic infarction of the intestine. The infarction is due to the entry of blood into the anæmic territory from the anastomoses above and below. It is remarkable that in the three cases which I show, the hæmorrhagic infarction should have been so slightly developed. In only one case, that from the Massachusetts Hospital, was it at all extensive. In the second case, although the entire artery was obstructed, there was only a beginning infarction in a small area of the intestine corresponding to the first embolus. In the first case it is probable that the thrombus of the aorta extending into the artery was not a totally occluding one. Only in this case was obstruction of the intestine a prominent clinical feature. It is probable that sufficient blood entered through the obstructed artery and through the anastomosis to preserve the integrity of the vessels sufficiently to prevent diapedesis and infarction, but not sufficient to provide the necessary enervation. It is important to know that obstruction of the superior mesenteric artery may give rise to paralysis of the intestine, obstruction and to peritonitis, and it is a condition which is beyond surgical interference.

LAMINECTOMY ELEVEN MONTHS AFTER INJURY TO THE SPINE.¹

BY WALTER B. PLATT F.R.C.S. (ENG.), BALTIMORE, MD.

MORE than twelve hundred years ago Paul of Ægina, that famous Greek physician, definitely proposed the operation of laminectomy after injury to the spine, in these words: "Wherefore, having first given warning of the danger, we must if possible attempt to extract by an incision the compressing bone, or if not, we must soothe the part by the anti-inflammatory treatment. But if any of the processes of the vertebræ of which the spine as it is called consists, be broken off, it will readily be felt upon examination with the finger; the broken piece yielding and returning again to its position, and therefore we must make an incision of the skin externally and extract it, and having united the wound with sutures, pursue the treatment for recent wounds."

Later, Albucasis also recommends that, when a piece of the spine is broken off and causing great irritation, an incision be made and the piece removed.

So great a period between the conception of an operation and its successful practical execution as exists in the case of laminectomy can scarcely be paralleled in the history of surgery.

We must not forget that eminent men have performed this operation again and again between that time and this, and that it was again and again advised as the right thing to do, while nearly always the result was fatal, apart from the mortality of the injury preceding the operation, in which other important structures and organs, notably the kidney, were damaged. Why the result was so fatal, we now know. It is an operation that can only succeed with the most perfect aseptic or antiseptic precautions.

Laurence Heister, Professor of Surgery in the German University of Helmstadt, writing in 1739, advises: "If in any case the spinal marrow should be divided, Death will generally be an inevitable Consequence. But to offer the patient no Assistance because we despair, would seem cruel and uncharitable; therefore we must try our Skill, though our Attempt should be in vain. In order to which, the Surgeon must lay bare the fractured Vertebræ with a Scalpel, and replace or else remove, such Fragments as injured the spinal-marrow. The Wound is afterward gently cleansed as usual, and dressed with the balsams . . . to be held on with the Napkin and Scapulary, till the wound Shall terminate either in a perfect Cure or Death."

In 1762 Louis removed fragments of the laminæ through a gunshot wound, and the man recovered with partial paralysis. This is, however, a very different matter from making an incision where no wound exists.

It is probable that Henry Cline, in the year 1814, was the first to do this (in other words, to do a laminectomy), and his patient died. For doing the operation he was severely condemned by his colleagues. Then comes a long list of laminectomies every one of which was fatal, each operator thinking that perhaps his method or the conditions in his case might admit of a good result.

There is a rather indefinite report of a case done by Dr. H. A. Potter, of Geneva, N. Y., where the patient survived. Hamilton ("Dislocation and Fractures")

gives a list of 14 operations by various surgeons all of which were attended by fatal results. Sir Astley Cooper ("Manual of Surgery," 1837) recommends the operation, but advises against it in the same breath. Hamilton, as late as 1875, tell us that "we are reluctantly compelled to declare that the expedient is scarcely worthy of a trial" ("Fractures and Dislocations").

Samuel Cooper ("Practice of Surgery," London, 1820), writes: "We read of incisions being made, and of the fragments of bone causing pressure on the spinal marrow being elevated or extracted; but what considerate surgeon would venture to imitate such practice." Bransby Cooper ("Surgical Essays," etc., London, 1843), in speaking of removing fragments of broken laminæ after an injury, by making an incision, says: "I believe there are cases which may warrant the importance of this operation, although at the same time I believe there are but few cases in which success is to be expected." Sir Benjamin Brodie ("Injuries of the Spinal Cord" in "Med. Chirurg. Transactions," London, 1837), says: "I am not aware that in any of the cases in which it has hitherto been performed the operation has been the means of preserving the patient's life or even of relieving any of the more important symptoms." Liston ("Practical Surgery," London, 1840), writes: "It has been proposed to make incisions on the broken bone to examine the extent of the fracture and displacement, and to attempt the removal of the pressure on the chord by trephining. . . . By these means, now generally and very properly looked upon as unwarrantable, effused blood could not be removed nor lacerations repaired, while the chance of inflammatory action would be much increased."

Gross, as late as 1862 ("System of Surgery"), writes: "Trephining will not be likely to be of any service; the operation has been tried in a number of cases of depressed fracture of the vertebræ, but in none has it ever been productive of any benefit."

Erichsen ("System of Surgery," "Science and Art of Surgery," 1872), in speaking of the removal of broken laminæ after spinal injury, writes: "But though so far the result has been but little satisfactory, ought surgeons to discard the operation? I think not."

Bryant ("Practice of Surgery," 1872,) mentions a successful instance of trephining by Gordon of Dublin, and adds one of his own where he removed the spinous process and laminæ of the fourth cervical vertebra, with recovery from the operation and decided improvement in motor power. The modern surgery of the spine is of but ten short years' duration, and most of the successful cases are within the last five years. Macewen, in 1883, did a laminectomy of three dorsal vertebræ, for complete paraplegia of two years' duration caused by angular deformity of the spine. The patient is said to have completely recovered (Treves, "Operative Surgery"). In June, 1888, Gowers and Horsley reported a case of the successful removal by laminectomy of a tumor from the spinal cord. Since then there have been a number of laminectomies reported, among them those of DeForest Willard, William White, Abbé, Burrell, Deaver, Dawbarn, and Richardson in this country, as well as Macewen, Lane, Wright and Duncan in Great Britain.

Dr. J. William White of Philadelphia and Dr. H. L. Burrell of Boston have made admirable reviews of the cases and results up to three years ago, when it is fair to believe that the technique of the operation was pretty well understood.

¹ Read at the semi-annual meeting of the Medical Chirurgical Faculty of Maryland, November 21, 1893.

The results in laminectomy, vary of course as to whether it is done immediately after the injury or some time afterward. Again, whether it is done for Pott's disease or for the removal of a tumor within the cord. Dr. William White has shown that out of 37 operations recently performed with antiseptic precautions, after fracture of the vertebræ, there were 6 complete recoveries; 6 were benefited, and recovered from the operation; 11 recovered, unimproved; and 14 died ("American Text-Book of Surgery"), a mortality of 38 per cent.

Careful observations show a very large per cent. of fractured laminæ in all cases of fractured spine. The pressure of the broken portions is often the exciting cause of secondary changes in the cord. This was probably true in the case now reported by me where the paralysis came on some three weeks after the injury. It is likely that the laminæ fractured at the time of the accident became displaced later and pressed upon the cord. It will be seen that operation was delayed until eleven months after the accident, and at least ten months after total paralysis, making the case a most unpromising one at the outset, both from the total long-existing paraplegia, and the extremely poor general condition. The operation was the only hope for the least benefit.

In the operations undertaken to relieve paralysis due to Pott's disease, the results have been brilliant. In one case where the paralysis of motion and sensation had existed for two years with paralysis of rectal and vesical sphincters, the boy was able (after five years) to play football. Laminectomy should never be done to relieve the paralysis of Pott's disease until the failure of all other approved methods of treatment, and the patient is steadily growing worse. Statistics show that over 80 per cent. of such cases recover without operation.

The mortality of laminectomies in traumatic cases, as stated by Chipault (*Revue de Chirurgie*, March, 1893), out of 160 cases, was 65, with 15 unknown results. He further states that in delayed operations after injury, myelitis sets in after two or three days, and after some weeks sclerosis of the cord; that delayed operations have never given satisfactory results, while early ones have nearly always had the contrary result.

We see then that in cases of broken back, instead of allowing the patient to die a miserable death, he should be operated on at an early date, and the compression removed, as is often possible by a laminectomy, when there is a good chance of, at least partially, restoring the patient to good health.

The patient J. L., white, thirteen years old, was admitted to the Garrett Hospital for Children, August 23, 1893, with the following history: In October, 1892, in coming down stairs the patient slipped, and in trying to recover his balance the back was bent sharply backward. In consequence of this, he suffered pain in the spinal column, which pain persisted. Two weeks later he fell from a car, striking his side upon a curbstone. One week later, while walking along the street the patient was suddenly seized with peculiar sensations in his legs and abdomen—tingling and numbness. This was accompanied by weakness of the lower extremities, whereupon he went to bed. In three days there was complete paralysis of motion and sensation as high as the margin of the ribs. Four days later loss of control of the bladder and rectum was

noted. One month after taking to bed, that is, about seven weeks after injury, a long, round curvature appeared in the dorsal region. The first bed-sore was over the sacrum, and this occurred about the end of December, 1892.

On entrance to the hospital, August 23, 1893, the patient exhibited the following physical signs: Anæmic, emaciated. Had a tight cough, no expectoration. Night-sweats present. Afternoon temperature 102.2°; pulse 128; respiration 32. Marked anterior posterior curvature of spine, from sixth to tenth dorsal vertebræ. The vertebral spines in question could not be felt by reason of the general thickening over the whole region. There was considerable swelling laterally, marked on the right side, where there was also some rise of temperature superficially. Tenderness and œdema, but no fluctuation. The swelling occupied the entire interscapular region. Scapula stood out prominently. There was dulness on percussion on the right side of the chest below the nipple in front, extending into the axillary region, and nearly all over the back. Loud pleuritic friction-sounds could be felt and heard over the right back posteriorly, below the scapula. The skin over the paralyzed region was dry, shiny and desquamating. Small, round, fecal masses could be plainly felt along the tract of the ascending colon. There was complete paraplegia, both motor and sensory. There was great wasting of all the muscles in the paralyzed area. The paralysis extended as high as the line of the tenth rib behind, and one inch from the costal margin in front. There was a wide zone of hyperæsthesia immediately above the line of paralysis. There was a line about one inch wide below the hyperæsthetic zone, where sensation was dulled, but not absent. Below this paralysis was complete. Entire loss of control over sphincters of bladder and rectum. There were seven or eight bed-sores, some large, some much smaller. They were situated over the sacrum, trochanters, heels, and over the right fibula below, etc. The pleuritic friction-sound rapidly diminished, and finally disappeared after four or five days. There was never any pus or discharge from the back, except such as arose from the bed-sores.

OPERATION, SEPTEMBER 6, 1893.

The patient being etherized, two longitudinal parallel incisions were made, one on each side of the dorsal spine, five inches long, extending from the fourth to the ninth vertebral spines. These were connected at the top by a transverse incision after the completion of the others, and after the hæmorrhage had been checked. The latter was abundant and of very dark blood.

The longitudinal incisions were made just to the inner side of the transverse processes, which were with difficulty made out, with the patient in the semi-prone position; the planes of the incision were directed toward the median line as well as downward. The hæmorrhage was checked by pressure with pads of sterilized gauze, thrust into the wounds. The interspinous ligament was now divided at the bottom of the transverse incision, and the laminæ of three vertebræ, the fifth, sixth and seventh, divided close to the transverse processes by oblique-cutting forceps. A number of loose fragments of laminæ were felt and removed when the longitudinal incisions were first made. The flap, consisting of skin, muscle, ligaments and bone, was turned downward, exposing the dura mater of the

cord. All pieces of bone which could be felt in the reversed flap were now detached from their connections. The pieces were irregular in outline, and evidently remnants of partially absorbed laminæ and spines. The dura was exposed for a distance of four inches. It appeared to be perfectly healthy, and was not therefore opened. The spinal canal above and below the seat of operation was smooth, and of normal calibre. The dura was pale blue in color, not thickened externally, neither was there any pus or exudation seen anywhere in the course of the operation.

The flap was now replaced, and stitched in place by a number of silkworm-gut and a few silk sutures. These were for the most part inserted as deeply as possible. No arteries required ligature. A rubber drainage-tube was inserted at each outer, upper angle of the wound. Iodoform gauze, sterilized gauze, and absorbent cotton were applied, and the whole kept in place by a gauze bandage.

The operation lasted one hour and twenty minutes. During the night the patient seemed very weak, but reacted well considering his exceedingly feeble state; and the day following he seemed but little weaker than before the operation.

September 11th. Patient has some cough, but is steadily gaining in strength each day.

September 12th. Yesterday patient complained of his toes feeling cold and as if electricity were passing through them. Nine centimetres above umbilicus he has skin sensation. Deep pressure can be felt much lower down. Touching skin just above the totally paralyzed area excites reflex movements of opposite left (right) hand. Pressure in right hypochondrium excites immediate pain in the left. Bed-sores looking better. There is occasionally a faint, dry cough.

September 13th. Said he felt the catheter when it was passed.

September 14th. Seven sutures removed, some pus about stitches.

At the present date (November 21) the patient is as emaciated as before. The bed-sores have nearly all healed a great deal since the operation. Some are entirely well. The patient, as a rule, eats with an excellent appetite. He can now lie on either side with comfort, something impossible before the operation. There is no perceptible gain in skin sensation. The anæsthesia (to touch) is as marked as before the operation. The patient is, however, considerably more sensitive to abdominal pressure, and much more so to the stimulation of the faradic current. He now feels the faradic current in both thighs, legs and feet, when applied over the tracts of the large nerves with firm pressure. Application of the current to one limb will often cause decided sensation in the opposite limb. Wherever the current is applied, whether to thigh or leg, patient complains of feeling the current in the feet. There is absolutely no contraction of any muscle below the paralyzed area to any amount of faradic stimulation. The lines of operation are entirely healed, with the exception of a small granulating surface at one upper angle one-quarter of an inch in diameter. There are no sinuses left after the operation. Patient sits propped up in bed a few minutes at a time without undue fatigue.

The net result of the operation at the time of writing this paper, may be stated to be: No improvement whatever in motion since operation, some decided increase in sensitiveness to faradic stimulation, healing

of bed-sores to a considerable extent. The patient is able to lie on either side for a time without fatigue, something impossible before, although he was in the hospital two weeks before operation. He has apparently reached a standstill in improvement in his general condition. He no longer has night-sweats.

I was never able to convince myself of the existence of tuberculosis of the lungs. He has had the most careful nursing, and the most generous diet that he could take, wine and whiskey being allowed with his meals. When his temperature rose he was immediately put upon a suitable diet. One four-hundredth of a grain of atropia at night will control the sweats perfectly, as we repeatedly determined. He has always been catheterized twice daily, and the bladder washed out when urine became turbid or ammoniacal.

In performing the operation the following points were noted:

The copious venous hæmorrhage, controlled by pressure with pads of sterilized gauze wrung out of hot boiled water.

The unusual retraction of the skin, which rather assisted than acted as an obstacle in carrying out the operation.

The difficulty in dividing the laminæ, and the care that had to be used in keeping within the transverse processes so as not to go wide of the objective point.

The operation is considerably easier on the living than on the cadaver, on account of the bowing of the back usually present in the patient, and the comparative wasting of the muscular substance.

With ordinary care there is little danger of wounding the spinal cord.

The cutting bone-forceps should be directed well inwards, so as to divide the laminæ at a right angle to their axes.

We are not only justified in considering, but we are bound to regard laminectomy of the spine in the same way as we do trephining of the skull, that is to say, the mortality of the operation after an injury is to be attributed in large part to the injury which is the occasion of the operation, and not to the operation itself.

As in trephining the skull, the mortality should be reckoned by the number of deaths occurring when performed for disease. The mortality should, moreover, be distributed according to groups; for example, the number of deaths after an operation to remove broken or displaced laminæ might be widely different from a laminectomy to relieve pressure of an exudation between the laminæ and the bone, or for hæmorrhage without or within the dura, etc. No useful purpose or rules for guidance can be formed by grouping unlike cases together. As in skull-trephining after accident, the bad results after spine trephining are largely due to the laceration of the nervous substance which may be injured, beyond any possibility of repair, by the force of the blow constituting the accident — not due to the surgical operation, but in spite of it.

A large portion of the back of a cadaver was here exhibited, showing the facility with which a sufficiently large section of the cord may be exposed without loss of substance; the ease of replacing the flap which was turned down; the depth below the surface of the latter, reminding one strongly of the railroad at the bottom of a "cut." The disadvantages of this operation were also shown, there being two long incisions instead of one to heal, twice as many vessels divided, and the muscles close to the median line cut transversely above.

Practically I do not believe these objections in any degree important.

FURTHER HISTORY.

The patient seemed to be gradually losing strength the first week in December. He was taken home (five hours by rail) against advice, by his father, December 24th, and died December 31, 1893, 116 days after the operation. This was one of those cases where there was reason to fear a total transverse lesion of the cord; but as the operation offered the only hope of relief, it was performed. No autopsy was obtained.

Clinical Department.

CLINICAL NOTE-TAKING, WITH A LIST OF FOUR HUNDRED AND NINETY-ONE MEDICAL CASES SHOWN TO THE THIRD CLASS OF THE HARVARD MEDICAL SCHOOL.¹

BY ELLIOTT P. JOSLIN, A.B., PH.D.,
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MANY advantages accrue from note-taking at a clinic, but for these notes to be of permanent value to the student they must be accessible. With this end in view the following method has been adopted by the writer.

The record of each patient was taken on a separate sheet of paper. At the head of the sheet was printed

Diagnosis	Sex	Married	Single	Age
Duration				
Name				
Residence				
	Occupation			

If the case required more than one sheet, blank slips of the same size were used, and the pages numbered. This allowed easy insertion of subsequent reports of the progress of the individual. The same plan allowed a ready classification, since all the notes were turned into a card catalogue by a simple grouping of cases. These were arranged in a box with index cards of appropriate size denoting the various diseases. As a result, a student can have at the end of his course a very serviceable text-book of medicine, containing the teachings of several clinicians emphasized by and based on what he has himself seen. How valuable this "text-book of notes" may be, can be judged from the following list of cases which were shown by Drs. R. H. Fitz, F. C. Shattuck, A. L. Mason and H. F. Vickery at the Massachusetts General and City Hospitals. The list covers a period of about twelve school-year months, and represents the cases seen by one member of the present third class of the Harvard Medical School.

SPECIFIC INFECTIOUS DISEASES.

Typhoid fever 21, vaccination 1, mumps 1, influenza 3, sequelae of diphtheria 2, malaria 7, syphilis 7, tuberculosis of lymph glands 3, tuberculosis of lungs 10, tuberculosis of peritoneum 3, tuberculosis of meninges 1, general tuberculosis 3. Total, 71.

CONSTITUTIONAL DISEASES.

Rheumatic fever 2, chronic rheumatism 6, pseudo-rheumatic affections 4, muscular rheumatism 2, arthritis deformans 3, gout 2, diabetes mellitus 12, rickets 4. Total, 84.

DISEASES OF THE DIGESTIVE SYSTEM.

Stomatitis 1, chronic tonsillitis 2, cancer of the œsophagus 1, gastric catarrh 1, dyspepsia 2, nervous vomiting 1, dilatation of stomach 3, gastric ulcer 2, gastric cancer 11, diarrhoea 1, appendicitis 11, intestinal obstruction 1, constipation 1, catarrhal jaundice 4, gall stones 7, cirrhosis of liver 13, abscess of liver 2, neoplasm of liver 2, dislocation of liver 2, hypertrophy of spleen 1. Total, 74.

¹ Read at a meeting of the Boylston Medical Society, April 12, 1894.

DISEASES OF THE RESPIRATORY SYSTEM.

Acute bronchitis 1, chronic bronchitis 4, bronchitis and emphysema 3, bronchial asthma 5, partial occlusion of bronchus 1, œdema of lung 1, acute fibrinous pneumonia 13, chronic interstitial pneumonia 2, emphysema 1, gangrene of lung 1, abscess of lung 1, acute pleurisy 13, chronic pleurisy 8, cancer of pleura 1. Total, 62.

DISEASES OF THE CIRCULATORY SYSTEM.

Pericarditis 4, endocarditis 2, chronic valvular disease 34, hypertrophy and dilatation 4, myocarditis 4, neuroses of heart 1, arteriosclerosis 3, aneurism 5, phlebitis 2, abnormal position of pulse 1. Total, 63.

DISEASES OF THE BLOOD AND DUCTLESS GLANDS.

Secondary anemia 5, chlorosis 4, progressive pernicious anemia 2, leukæmia 8, pseudo-leukæmia 6, goitre 2, exophthalmic goitre 7, myxœdema 2. Total, 36.

DISEASES OF THE KIDNEYS.

Hyperæmia 1, floating kidney 6, paroxysmal hæmoglobinuria 1, chyluria 1, acute nephritis 7, chronic nephritis 10, renal calculus 4, tumors 2, perinephritic abscess 1, incontinence of urine 1, cystitis 1. Total 41.

DISEASES OF THE NERVOUS SYSTEM.

Neuritis 11, Menière's disease 1, scoliosis 3, diffuse myelitis 1, ascending lateral degeneration 1, descending lateral degeneration 1, locomotor ataxia 7, compression of spinal cord 1, cerebral meningitis 2, aphasia 1, hemiplegia 13, insular sclerosis 1, general paralysis of the insane 2, brain tumors 3, chorea 6, epilepsy 5, migraine 1, occupation neurosis 1, hysteria 2, neurasthenia 4, hemianæsthesia 1, acromegalia 1, scleroderma 1, melancholia after delivery 1. Total, 78.

DRUG POISONING.

Alcoholism 4, opium 2, lead 10, arsenic 2, tobacco 2, illuminating gas 2, acconite 1, copalbe 1. Total 24.

MISCELLANEOUS.

Tumors 8, sexual impotence 1, debility 2, elephantiasis 1, "chronic unemployed" 1. Total 13. Total number of cases shown, 491.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

Concluded from No. 16, p. 387.

TRAUMATIC ANEURISM OF THE VERTEBRAL ARTERY.

Matas¹⁷ records a case of aneurism of the vertebral artery, which was cured by extirpation of the sac. The author concludes: "That in certain favorable cases of traumatic aneurism in the upper and more superficial part of the vertebral artery, recovery without operative interference is possible. In every case when the danger of rupture of the sac is not immediate, good results may be expected, if only as adjuvants to future radical treatment, from the systematic application of cold and pressure to the sac, or digital pressure over the artery below the carotid tubercle. In most cases there is a tendency in the aneurism to progress rapidly to rupture, such tendency being often favored by the increased tension caused by ligature of the carotid trunks under mistaken diagnosis. This error may always be avoided by carefully observing the effects of temporary compression of the carotid on the circulation in the tumor. Free exposure of the bleeding region and temporary plugging have hitherto given the most satisfactory results. The use of coagulant injections is especially to be condemned. In the extremely rare cases of idiopathic cervical aneurism, and in circumscribed traumatic aneurisms situated high up in the posterior triangle, proximal ligature might be attempted with some prospect of success, especially if cold pressure and rest be resorted to as adjuvants in the treatment. In aneurisms situated low down in the posterior angle, the Hunterian operation will almost certainly fail, as it will be found impossible to reach the trunk of the

¹⁷ *Annals of Surgery*, November, 1893; *British Medical Journal*, December 9, 1893.

artery without involving the sac in the incision. When in a case of an aneurism well circumscribed and situated high up in the neck, the ordinary local treatment has failed and it has been decided to open the sac, it is justifiable to expose the vertebral artery below the anterior tubercle of the sixth cervical process, and to compress the vessel until its wounded part has been definitely secured at the bottom of the aneurismal cavity. In the management of non-aneurismal wounds of the vertebral artery, the surgeon should apply the same treatment as in cases of traumatic aneurisms in this vessel. In some rare cases, however, and especially in gunshot injuries through the mouth, in which more than one vessel may be injured, a direct attack on the bleeding point is impossible. As plugging through the mouth is impossible, the only hope for the patient lies in the immediate but provisional control of both the common carotid and vertebral arteries of the same side, with a view of cutting off the entire arterial supply from the injured region. After the precise seat of the hæmorrhage has been deliberately made out, the definitive ligature may then be applied to either of the exposed arteries, or to both, if necessary. In the more common cases the difficulties in applying direct pressure to the bleeding point are less in the upper part of the neck than in the lower part where the artery is surrounded by vital structures."

A MODE OF CONTROLLING THE CIRCULATION THROUGH THE ABDOMINAL AORTA.

William McEwen¹⁸ suggests a method which he has used for the last fifteen years for controlling the abdominal aorta. It is as follows:

"As the patient lies on his back on the table, the assistant, facing patient's feet, stands on the left side of the table in a line with the patient's umbilicus. He then places his closed right hand upon the patient's abdomen, a little to the left of the middle line, the knuckles of the index finger touching the upper border of the umbilicus, so that the whole hand will embrace about three inches of the distal extremity of the aorta above its bifurcation. The assistant, then standing upon his left foot, his right foot crossing his left and resting upon the toes of the right—an attitude commonly assumed by public speakers—leans upon his right hand, and thereby exercises the necessary amount of pressure. With the index finger of the assistant's left hand, the weight necessary for the purpose can easily be estimated by the effect produced upon the flow of blood through the common femoral at the brim of the pelvis. Whenever the flow of blood through the femorals is absolutely arrested the abdominal aorta is sufficiently controlled, and no further weight ought to be applied.

"The weight exercised can be varied at will by increasing or decreasing the angle which the assistant's body makes with the floor. The position which the assistant assumes relatively to the patient is represented in the accompanying photographs.

"As the abdominal aorta sometimes bifurcates higher than usual, before the operation is commenced a trial of the effect of the pressure at the part selected ought to be made, testing the result of pressure on both femorals. When *both* are equally controlled, the bifurcation occurs below the point pressed on; when only one is controlled the hand requires to be placed on a more proximal part.

¹⁸ *Annals of Surgery*, January, 1894.

"As there is no direct muscular effort required in maintaining the pressure further than the preservation of the equilibrium, the position can be maintained by the assistant without undue strain on his part, and without shifting his hand for at least half an hour, a time amply sufficient for the performance of most operations requiring the control of the circulation through the abdominal aorta."

SUTURE OF NERVES.

Gneiss¹⁹ reports eleven cases of nerve-suture at Brun's clinic. Four were cases of primary operations, and seven secondary. The following nerves were sutured: the median, five times; the ulnar, three times; the radial, four times; the perineal nerves once. All but one operation was successful. An interesting point of the report is the description of Brun's technique. In the cases of primary operation the ends were united at once; in the secondary cases the ends were usually refreshed and the cicatricial mass removed. One case, as shown by illustration, was treated by making a slit in the nerve trunk, which split the cicatrix and extended into sound nerve tissue; the ends of the cut were then approximated so that the sides were brought in contact, and the line of incision at right angles to the long axis of the nerve trunk. Sutures passed through these lateral projections secured the nerve in its new position. Catgut was the material used for suture. In four cases the nerve was protected from pressure during healing by a decalcified bone tube. The article is a valuable one, and contains many interesting details.

SUPPURATIVE TENO-SYNOVITIS.

Tollemer and Macaigne²⁰ relate a case in a man aged nineteen. On the fifth day of the gonorrhœa he had pain and swelling in the small joints of the left hand. On the fourteenth day the right hand, and chiefly the tendon of the index finger, were affected. Here a lymphangitis also appeared. The pus was let out, and movement was eventually completely restored. The tendon of the left little finger also became involved. The inflammation was here adhesive only, and the tendon remained adherent to the sheath with limitation of movement. In the above-named pus, a micro-organism—proved to be the gonococcus (1) by its form, (2) by its presence in the cells, and (3) by its decolorization by Gram's method—was found in pure culture. Cultivation experiments were also made. There is now no doubt that gonorrhœa may assume the character of a general disease. The micro-organism has rarely been found in the articular serous effusions, but the negative results may be due to its rapid disappearance. There was practically no fever during the whole of the illness. Owing to the limited vitality of the gonococcus, the suppuration seems to end as soon as the pus is let out.

MALLET FINGER.

Robert T. Morris²¹ describes a condition which he states is not uncommon among men engaged in athletic sports. The injury consists, not in a bodily separation of the tendon from its points of attachment, but rather in a thinning of the tendon cephalad from the principal point of attachment to the phalanx, and from

¹⁹ *Beiträge zur Klin. Chir.*, 1893, Bd. x, Heft 2.

²⁰ *Rev. de Méd.*, November, 1893; *British Medical Journal*, December 16th.

²¹ *Medical News*, September 9, 1893.

the fibres that form the posterior ligament of the last phalangeal articulation. A few fibres of the tendon are undoubtedly ruptured, but most of them slide away from each other very much as the threads of a textile fabric separate when the fabric is violently stretched, but not torn, the structure retaining its original general appearance.

Immediately after the occurrence of the injury to the tendon, the last phalanx of the finger assumes a semi-flexed position, and the deformity is usually permanent, the extensor tendon then having little or no influence upon the freed phalanx. Aside from the uncanny appearance of such a finger, the deformity is a source of annoyance to the patient.

The tendon is repaired without much difficulty by making a longitudinal incision two centimetres in length over the site of the injury, dividing the thinned tendon longitudinally into the two principal fasciculi into which it naturally separates, dividing the tendon cephalad transversely from the thinnest point, and advancing each fasciculus to a point upon its own side of the finger, near the base of the finger-nail. At this point the fasciculus is sutured to the under surface of the skin rather than to the periosteum and tendinous remains, because the former structure affords a firmer hold; and the cut end of the tendon makes as good a union with the phalanx as it would if sutured directly to the periosteum.

TREATMENT OF TUBERCULAR COXITIS BY IODOFORM INJECTIONS.

C. Bunker²³ considers this method advantageous, and recommends Kenster's technique. He injects into the hip-joint through a puncture made at a point (the inner border of the sartorius) in a horizontal line drawn from the femoral artery where it crosses the pubic bone to the trochanter. The injection is made with a hypodermic syringe having a needle five to seven centimetres long. Two and one-half grammes of a twenty-per-cent mixture of iodoform and glycerine are injected every eighth to fourteenth day.

OSSIFYING HÆMATOMA.

Arsdale²⁴ has reported a case occurring in a man twenty-two years of age, who had a severe contusion on the right arm, just below the insertion of the deltoid. When first seen a fluctuating tumor was there. At the end of six weeks a tumor of bony hardness was present. Aspiration having failed, it was decided to remove the tumor. This was done, and the patient was discharged cured. The function of the arm at the end of two years was perfect. The points of interest in this case are that an ossifying hæmatoma may be readily confounded with an osteoma, periostitis, myositis ossificans and osteosarcoma.

SOME POINTS OF PRACTICAL IMPORTANCE IN THE USE OF CURVED SKIN INCISIONS.

In an interesting article, Peyton T. B. Beale²⁵ has summarized the advantages of curved over straight incisions wherever the former is practicable.

"(1) It heals more rapidly, and for these reasons: there is really only one edge of the wound, that belonging to the flap, that is movable, the other edge being still adherent to the subjacent tissue; moreover, the flap having been stitched to the neighboring skin

or held well away from the seat of operation, both edges of the wound are quite uninjured by the time the sutures are inserted. (2) The resulting scar is smaller, though this is only of importance in certain parts, for the skin may be incised obliquely in making a curved incision, so that the epidermis on the edge of the flap is slightly in advance of the true skin. (3) It fully exposes the part to be operated upon, assuming that the base of the flap is twice or three times its length, and gives the operator plenty of room in which to work. (4) Suturing the edges is easier than in the case of a straight incision, especially if the skin be pricked in one or two situations exactly opposite to one another before the incision is made, and more often the curved wound is adapted to the shape of the part than a straight one. (5) The resulting cicatrix is not over the seat of operation. (6) Drainage is often most perfect by inserting a tube through an incision in the base, or some part of the flap, thus giving no hindrance to the primary union of the incision, and preventing any possible discharge from infecting the edges. (7) Incision through inflamed or diseased skin may be avoided, and yet the disease is easily reached. (8) There need be no tension on the edges of the wound, as the flap of skin is, so to speak, loose, and if there is fear of tension, a silk suture can be passed through the base or some part of the flap and out again, and then through the skin on the other side of the incision, and there fixed, thus avoiding a long suture beneath either edge of the wound. I think that the form of skin incision, its subsequent result to the patient, and its immediate results to the surgeon during the progress of an operation, are matters often neglected, and not sufficiently considered before the operation is undertaken, and I feel sure that there are many points of interest connected with the subject."

BLOODLESS AMPUTATION AT THE HIP-JOINT.

Dr. John A. Wyeth²⁶ reports 40 cases operated upon by his method. This is undoubtedly one of the best methods we have for controlling hæmorrhage in this formidable operation. He says: "Without discussing statistics, I claim it safe to conclude that by the method given bleeding after hip-joint amputation is as safely and surely controlled as for an amputation of the thigh lower down. In no single case has it failed, and it has been employed by operators of all grades of experience. The 40 cases are divided as follows: sarcoma, 17 (mortality, 11.76 per cent.); inflammatory bone disease, 18 (mortality, 16.6 per cent.); violence, 4 (mortality, 100 per cent.); nerve injury, 1 (mortality, —); for disease, 36 (mortality, 13.88 per cent.); for injury, 4 (mortality, 100 per cent.); giving a total death-rate of 22.5.

SACRAL OSTEO-PLASTIC OPERATIONS.

Czerny's²⁷ report at the last meeting of the German Surgical Congress, in which he describes the removal of intra-pelvic tumors by the sacral route, is a very interesting one. It describes in detail numerous operations performed for the removal of such neoplasms, and is too long to give more than the writer's conclusions. An excellent abstract has been published, however, by Warbasse.²⁸ Czerny thinks that the sacral method of operating on intra-pelvic tumors will

²³ Centralblatt für Chir., 1893, No. 51.

²⁴ Annals of Surgery, vol. xviii, No. 1, July, 1893.

²⁵ Lancet, July 8, 1893.

²⁶ Medical News, December 9, 1893.

²⁷ Verhandlung der deutschen Gesellschaft für Chir., xxi Kon-
gress, 1893.

²⁸ Annals of Surgery, 1893, vol. xviii, 561.

pass through the same stages as the sacral extirpation of the rectum. It was at first received with indifference or reserve, then practised too enthusiastically, but gradually has taken its proper and legitimate place, and is considered an operation of value in selected cases. He also thinks the sacral route is the shortest to the parametrial region for the enucleation of paracervical myomata, or similarly situated growths.

ON THE ADVANTAGES OF THE STEEL SCREW IN THE TREATMENT OF UNUNITED FRACTURES.

W. Arbuthnot Lane²⁸ suggests the use of steel screws in immobilizing ununited fractures. He speaks of the difficulty of retaining the saw surfaces in position by means of silver wire, and believes that the two following conditions must be complied with to ensure success:

"(1) The surgeon must not be satisfied with removing a thin surface of bone on each side of the fibrous ankylosis, but a good, thick slice must be taken off the end of either fragment, so as to expose the normal structure of the shaft. It would seem that the bone in the immediate vicinity of the acquired amphiarthrodial joint undergoes such vascular changes as interfere with its taking an active share in the formation of callus and bony ankylosis of the fragments. If a thick slice of bone, which has been sawn off one of the fragments in such an operation, is divided vertically, the bone in immediate relation with the false joint will be found to be dense and comparatively evascular, and this condition will be found to extend for an unexpected distance into the shaft. Therefore, in order to obtain bony union with any certainty, it is necessary to sacrifice a considerable portion of the length of the limb, and the amount of bone removed from each fragment must bear a direct relationship to the duration of the interval that has elapsed since the injury. Such operations are sometimes the most difficult in surgery, especially when performed for ununited fracture of the tibia in its upper third. The difficulty is sometimes greatly increased by the necessary removal of a portion of the fibula, this bone not having been broken at the same time as the tibia, or, if it had been, union had ensued in it. Such conditions of non-union of fractures in the leg are, in my experience, always the result of the application of the principle of the vertical foot-piece, and I trust that, since the fallacy of that treatment has been satisfactorily exploded, surgeons will not have to deal with such difficult cases in the future.

"(2) The recently sawn surfaces of bone must be retained immovably in accurate apposition. I have frequently found the greatest difficulty in retaining the freshly sawn surfaces of bone in accurate and firm apposition by means of the silver wire, for the reason that the oblique sectional planes presented by the fragments are in different vertical levels, and tend, when fastened together with wire, to separate vertically, however firmly they may be clamped together during the boring of the holes, and however great the strain exerted on the wire during its fixation in position. Again, the circumstances are quite different from those present in a recent fracture, where, as is well known, if sufficient care and trouble are taken, the broken surfaces will correspond exactly. In the case of the ununited fracture, the plane of the fracture is often only to be guessed at, since it has been much

modified by the formation of callus, etc. I have been much disappointed on several occasions, on cutting down on cases of ununited fracture in which an operation had been performed without success, to find the loop of wire lying comparatively loose in the bones. I therefore determined to try what I could do by using screws instead of wire, and then found that I was able to bring and to retain the opposing surfaces of bone into most accurate and forcible apposition by means of this powerful instrument. The use of two screws is much more advantageous than one alone, for the reason that any rotation of the bony surfaces around the screw as an axis is completely obviated. The screws produce no irritation whatever, and do not require to be removed. I should have found some of these operations impracticable but for Gowan's osteotome, which is an invaluable instrument under the circumstances. With it, one is enabled to ensure accuracy of parallelism in the sectional planes with a minimum of damage to adjacent vessels (a matter occasionally of no little importance), and by using the clamp portion of the instrument without the saw, the cut surfaces can be held firmly and immovably in apposition during the boring of the holes and while the screw is being driven in. It is well to remember that it is by means of the final turns of the screw that firmness and accuracy of apposition are obtained."

SEPARATION OF THE LOWER FEMORAL EPIPHYSIS.

Mayo Robson²⁹ directs attention to this accident, which is usually the result of direct violence. Shortening the projection of the diaphysis in the popliteal space, and of the epiphysis anteriorly, combined with the interference in the circulation, are the physical signs present. If there is any difficulty in reduction an anæsthetic should be used and the tendo-Achillis divided. A weight and pulley are needed in the after-treatment. If the large vessels are ruptured and gangrene supervenes, of course amputation is necessary.

TREATMENT OF GUNSHOT WOUNDS OF THE ABDOMEN.

Von Braman³⁰ has reported eight cases of gunshot wound of the abdomen, and has been led to form the following conclusions: (1) In all cases of gunshot wounds of the abdomen in which signs of injury of stomach or intestine, or of profuse internal bleeding, are presented immediately after the injury, prompt laparotomy is imperatively indicated. (2) The operation is especially indicated in every case in which the direction taken by the bullet leads not only to a probability, but even to a possibility, of the existence of a wound of the stomach. In 90 per cent. of cases of such injury to the stomach, death is inevitable under any plan of expectant treatment. (3) When undetected, laparotomy should be performed as soon as possible in cases of gunshot wound of the abdomen, as the prognosis becomes more and more unfavorable after every hour, and — particularly as a result of septic perforation — peritonitis is very bad indeed after an interval of twenty-four hours. (4) The indications for laparotomy thus furnished by the results of abdominal gunshot wounds in civil practice are still more imperative in the practice of military surgery. (5) Hæmorrhage caused by gunshot wounds of the liver and spleen should be assisted by plugging after laparotomy. (6) Operative interference and extirpation

²⁸ *Lancet*, December 16, 1893.

²⁹ *Annals of Surgery*, vol. xviii, No. 1, July, 1893.
³⁰ *Centralbl. f. Chir. Beilage*, No. 20, 1893.

in cases of gunshot wound of the kidney are indicated only by profuse and persistent bleeding. (7) Lateral wound of the ureter may heal spontaneously; complete division, however, indicates stitching, and in case of failure of this plan, nephrectomy. (8) Gunshot wound of the bladder should invariably indicate suprapubic section and closure of the wound by sutures, and the retention during the healing of a urethral catheter.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING February 10, 1894, the President, DR. CHARLES M. GREEN, in the chair.

DR. F. MINOT read a paper entitled

OBSERVATIONS ON CASES OF FIBROID TUMOR OF THE WOMB.¹

DR. J. B. AYER spoke of a case that had formerly serious hæmorrhages. She is now forty-eight years old and the hæmorrhages have practically ceased, although he was called to see her about a year ago for retention of urine. He could recall other cases where the symptoms improved but the tumor remained of the same size.

DR. W. H. BAKER said he was much interested in the paper and thought it was very unusual for nearly one third of the cases to be between twenty and thirty years of age. The youngest case he could recall was twenty-three years old. Retention of urine he had found to be rather rare, as the bladder can usually accommodate itself to the growing tumor. As regards pregnancy, he had found that the fibroids increase very rapidly in size during the pregnant state, while after delivery they diminished very rapidly and sometimes disappeared, the process of involution extending to the tumors.

DR. F. MINOT mentioned a case of spontaneous expulsion of a fibroid tumor without any immediate unpleasant effect. In a few weeks the patient began to cough, became tuberculous and died in a few months. In another case, after a severe hæmorrhage, spontaneous expulsion of a large fibroid tumor took place.

DR. W. L. BURRAGE said that in his experience these tumors, as a rule, cause comparatively little interference with micturition. They occasionally cause inflammation in the pelvis which clears up; as regards their effect on the rectum, chronic and obstinate constipation often occurred. The cases Dr. Minot reported of absence of hæmorrhage for a long period were particularly interesting.

DR. F. H. DAVENPORT had seen but few patients with vesicle trouble due to fibroids. One was a case of multiple fibroid tumor he had seen to-day who has occasionally had retention of urine needing the catheter. In another case there was slight hæmorrhage from the bladder. He found here a small fibroid projecting from the anterior wall of the uterus and pressing against the bladder. On raising the uterus the hæmorrhage ceased.

DR. A. WORCESTER said he had heard a good deal said on the necessity of operating on every case of fibroid of the uterus. He wished he could feel that the operation was a safe one. He had watched patients who have carried fibroids for years, cases that had been handed down to him from other physicians. One is a lady of fifty years who has been cognizant of the tumor for twenty-five years. The tumor is so large it rises above the umbilicus and seems like preg-

¹ See page 405 of the Journal.

nancy at full term. She menstruates regularly, and has never suffered from menorrhagia or dysmenorrhœa; in fact, she is perfectly well and is able to do an immense amount of work. Another case, which had also been handed down to him, was supposed to have a fibroid tumor before 1855. She has never been ill with it, but a short time ago it began to increase in size. Dr. Homans saw it, and found it to be not a fibroid but an ovarian tumor, and removed it. Another case had a fibroid as large as an orange on the right side of the uterus, very prominent during pregnancy. After delivery she made a poor recovery, complaining of pains in the pelvis, an enlarged ovary being found. The ovary was removed by laparotomy, and the fibroid was found to have nearly disappeared, having decreased to the size of the thumb.

DR. GREEN recalled one case in which a large fibroid was spontaneously expelled: the tumor was about as large as a fetal head. The patient had previously declined operative treatment, and was given ergot, tampons being occasionally used to control hæmorrhage. He had seen five or six cases in which labor was complicated by the presence of a fibroid tumor: where the tumor is seated low, perhaps filling the pelvic cavity, it may obstruct labor and necessitate abdominal delivery of the child or embryotomy; but in each of the cases he had seen the tumor recede, as labor advanced, and the child was delivered either spontaneously or by the aid of forceps. When the tumor is seated somewhat higher, it may interfere with the ordinary mechanism of labor; or, what is more serious, it may interfere with the retraction of the uterus. If, by chance, the placenta is attached wholly or in part over the tumor, serious and even fatal hæmorrhage may result. In regard to the subsequent shrinkage in fibroid tumors after pregnancy, he thought that usually the tumor involuted with the uterus: such was the case in two patients he had seen within a year. In one of these cases, which was in the Boston Lying-in Hospital, at the beginning of labor the tumor entirely filled the pelvis; but it receded, and the child, which presented the breech, was extracted alive without especial difficulty. The uterus and tumor both involuted, and at the conclusion of convalescence the tumor had shrunk to such a degree that it would scarcely have been detected without careful examination. Dr. Green thought that it was well to remember in these days of operative zeal that fibroid tumors very often not only do not grow rapidly but even remain stationary for years. He had seen a case the day before which he had observed for four or five years: the tumor, which was sub-peritoneal, reached nearly to the umbilicus; but he had been able to detect no change in size during the time mentioned. The patient was forty-seven years of age, and there was reason to hope that with the menopause so near at hand there might be no further increase in the tumor. At present, certainly, there was no indication for operative treatment, as there was neither pain nor hæmorrhage, and the patient was inconvenienced only by the weight of the tumor.

DR. EDW. REYNOLDS said he had watched a fibroid grow to the size of a mandarin orange in the second pregnancy and then dwindle to the size of the little finger. In the third pregnancy it grew to the size of two clenched fists, and is now, six weeks after delivery, growing small again. He had observed this same thing in another case.

He had seen six cases of labor complicated with fibroids, all of which did well eventually. One had severe post-partem hæmorrhage; one had a very difficult face presentation, owing to the fibroid; but these were the only cases in which there was any difficulty.

DR. A. D. SINCLAIR mentioned a case where a fibroid the size of a fist disappeared after confinement.

DR. F. H. DAVENPORT read a paper on

THE NON-SURGICAL TREATMENT OF CHRONIC PELVIC INFLAMMATIONS AND THEIR SEQUELÆ.¹

DR. W. H. BAKER said he would rather be asked to speak on the surgical side, but as that was ruled out by the paper he would quite agree with the method of Dr. Davenport, which puts the matter within the hands of the general practitioner and enables them to do good work.

DR. G. HAVEN said he would fully agree with Dr. Davenport in the value of the treatment by massage.

DR. A. D. SINCLAIR said that glycerine, ichthyol, and massage were three very important things. Their proper application took time, but the results were good.

DR. A. WORCESTER would emphatically endorse massage.

DR. EDW. REYNOLDS reported a

CASE OF EXTRA-UTERINE PREGNANCY

and showed specimen.

Recent Literature.

Wimmer's Table and Notes on Human Osteology. For the Use of Students of Medicine. By SEBASTIAN J. WIMMER, M.A., M.D. With a preface by PROF. WILLIAM F. WAUGH. Philadelphia: The Medical Publishing Company. 1894.

Our opposition to anything of the nature of an anatomical compend has been so persistent and (in our own opinion) so well founded, that we find it difficult to give the praise to this little work which is no more than its due. None the less it states the main facts of osteology so clearly, simply and correctly that we must say that if used, and not abused by being taken as a substitute for a text-book, it is distinctly a valuable help to the student.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By RICHARD C. NORRIS, A.M., M.D., Demonstrator of Obstetrics, University of Pennsylvania; Assistant Obstetrician, University Maternity; Physician to the Methodist Episcopal Hospital; Obstetrical Registrar, Philadelphia Hospital; Consulting Obstetrician and attending Gynecologist, South Eastern Dispensary and Hospital for Women and Children. Third edition. Philadelphia: W. B. Saunders. 1894.

The primary and chief value of this work is, of course, to the students of the University of Pennsylvania, for whose use it was written. It is secondarily of interest to the specialist as offering an easy method of judging of the obstetrical instruction given in so prominent a school. The book is exactly what its title implies—a syllabus of Dr. Hirst's lectures—and little can be added to its title-page by a review except to say that it seems to be a good syllabus.

¹ See page 407 of the Journal.

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IDIOPATHIC HYPERTROPHY OF THE HEART.

It was formerly taught that hypertrophy of the heart is always consecutive to some valvular lesion or some other more or less distant impediment to the free circulation of the blood; the heart enlarges to overcome the obstruction, whether this exists in the valves or in the blood-vessels. It is only thirty years ago that Bour, in a thesis published in Giessen, described eighteen cases of hypertrophy of the heart without any discoverable valvular or arterial alterations.

Since this time, many memoirs have appeared in various parts of the world, especially in Germany, substantiating the existence of an idiopathic hypertrophy of the heart. Many of the cases reported were typical instances of the bovine heart. There is a group of cases of dilatation and hypertrophy consequent on prolonged overexertion, and treated of by the French writers under the head of *le cœur surmené* (the overworked heart). This affection was first noticed by Peacock among the Cornwall miners; was next described by Clifford Albutt, and was afterwards observed and studied by Da Costa and others, in soldiers who had, during the late American war, been disabled by forced marches and other hardships.

Osler writes of patients who frequently come under the observation of the physician: "They are able-bodied men, at the middle period of life, and complain first of palpitation or irregularity of the action of the heart, shortness of breath, and subsequently the usual symptoms of cardiac insufficiency develop. On inquiring into the history of these patients, none of the usual etiological factors causing valve disease are present, but they have always been engaged in laborious occupations, and have usually been in the habit of taking stimulants freely."

Schott, of Naubeim, says that the existence of such a condition following overstrain can no longer be doubted. He has made experiments with the view of producing acute overstrain of the heart in healthy and vigorous men by making them struggle till dyspnoea

came on. In a recent series of experiments the body of the struggling person was compressed by a girdle applied below the arch of the ribs, thus increasing the intracardiac pressure and making the action of the heart extraordinarily difficult. All the symptoms characteristic of acute overstrain of the heart were thus produced, namely, dyspnoea, arrhythmia of the pulse, tachycardia, etc., and above all dilatation of the heart, including auricles and ventricles. In the second series of experiments the heart sometimes assumed quite considerable dimensions. Cases were also mentioned in which symptoms of acute overstrain of the heart were produced by lifting heavy objects, climbing mountains, dancing, and particularly tight-lacing and velocipede-riding.¹ Such cases are reported by Jackson in a paper recently published in the JOURNAL.² And in connection with this subject it is well to be acquainted with the class of cases described by Da Costa, under the head of "Cardiac Asthenia, or Heart Exhaustion."³

At the recent meeting of the International Medical Congress held in Rome (March 29 to April 6, 1894) Laache, of Christiania, Norway, spoke of the subject of idiopathic hypertrophy in connection especially with alcoholism and overexertion. Alcohol is a prominent etiological factor, and in particular, beer-drinking. Here he is in accord with Bollinger who has published some interesting researches on idiopathic hypertrophy of the heart, and assigns to beer-drinking an important etiological part. According to these writers, the plethora provoked by the immoderate ingestion of beer, and the augmentation in the blood-pressure therefrom resulting, joined to a direct noxious action on the heart-muscle explains the hypertrophy and other heart troubles which are becoming increasingly frequent in certain cities of the Empire, "resulting in a mortality scarcely less than that caused by tuberculosis." The condition of the heart thereby caused is spoken of in Bavarian parlance as the *beer-heart*. This *beer-heart* is very prone to fatty degeneration; secondary valve-disease due to consecutive endocarditis is not rare. Strümpell affirms that this condition is very common in the draymen and workers in the breweries of Erlangen, very few of whom pass the forty-fifth year without indications of dilatation and hypertrophy of the heart (Osler). At the post-mortem examination the valves may be quite healthy, the aorta smooth, and no extensive arterio-sclerosis, or renal disease be found. The heart weighs from eighteen to twenty-five ounces.

Laache admits the frequent occurrence of cardiac hypertrophy among the Scandinavian nations from overstrain, especially in conjunction with heredity and habits of alcoholism. The Norwegians are very fond of gymnastic exercises, and these when indulged in immoderately cause overstrain of the heart. A medical confrère of his lost his life by heart-rupture after a long tramp on the Norwegian "ski" or skates. Sudden death is, in fact, according to the writer, a very

¹ Quoted from Sajous' Annual, 1891.

² February 1, 1894, p. 112.

³ American Journal of the Medical Sciences, April, 1894.

frequent termination of idiopathic cardiac hypertrophy with degeneration. So frequent, in fact, is this form of death in Scandinavia, that (in the words of this writer) "one can hardly open a newspaper without meeting with an account of a case of the kind, brought on by heart-failure or heart-paralysis." But, he does not overlook the wonderful recuperative power sometimes displayed by the heart, and which led Haller in his day to apply to it the epithet *ultimum moriens*.

With regard to the word *idiopathic* as applied to the cardiac enlargement resulting from the causes above mentioned, the word is quite correct. An idiopathic disease is a disease which exists by itself, and is not dependent on another (Robin). Some writers have spoken of an idiopathic hypertrophy of the heart as an affection occurring without discoverable cause. There is no sufficient evidence that any such affection has ever existed. The mechanism of idiopathic hypertrophy is not essentially different from that of hypertrophy secondary to valvular disease or renal sclerosis, and may be summed up in these words: *augmentation of blood-pressure*.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

ALL accounts of the Eleventh International Congress—those directly from Italian sources, those sent to the English, to the German and to our own journals, and those which we get directly from returning delegates—concur in indicating that it was at once the largest and the least well-organized of these international medical gatherings. There was no lack of good-will or of hospitable intention on the part of the hosts; but there unquestionably was an evident lack of previous appreciation of the inherent difficulties, of the great numbers, of the necessary conveniences, as well as a lack of executive capacity.

The truth is, the very success of these meetings threatens to be their ruin. It is next to impossible to provide properly for thousands of men speaking different languages who come together for five or six days, and it is quite impossible to do any sort of justice even to a small part of four thousand papers in three or four different languages.

The picnic side of these gatherings is the one which has developed the most strikingly, and which threatens to overshadow the rest. For those who can afford the time and the expense, the outing is excellent, moreover, they may make interesting professional acquaintances. Those who stay at home may console themselves with the reflection that they get the scientific results—a little later, perhaps, but always more fully and more satisfactorily—without the fuss and the scramble which are getting to be inevitable accompaniments of the Congress. It seems a fair question whether the unrestrained acceptance of many thousand papers is to be approved. It offers a golden opportunity, to be sure, for many to obtain the happiness of capitalized print; but a judicious selection would add much to the merit of the meetings.

MEDICAL NOTES.

CHARCOT'S SUCCESSOR.—Dr. Raymond of the Salpêtrière has been chosen by the Faculté de Médecine as Charcot's successor by a vote of thirty in thirty-one.

YELLOW FEVER AT RIO JANEIRO.—The yellow fever still continues to increase at Rio Janeiro, the deaths now numbering nearly a hundred every day, while there are between four and five hundred new cases every week.

A CASE OF SMALL-POX AT SUSSEX, N. B.—A case of small-pox has occurred in Sussex, N. B., the patient being a physician just returned from New York where he had attended a case of small-pox the week before in connection with his hospital work.

SAMUEL WARREN, D.C.L.—For the benefit of those of our readers who were misled by a statement in our editorial of last week on "The Doctor in Fiction," we call attention to the fact that Samuel Warren was not a physician, though he might have been. He studied medicine at Edinburgh, but lapsed into the law, which profession he followed with some distinction.

THE REAPPEARANCE OF CHOLERA.—The cholera has made its appearance again for the summer of this year. Throughout the winter there have been smouldering centres of the disease in Russia and in some Turkish districts, though not acknowledged by the governments of those countries. Since the first of April so many cases have occurred in Czenstochow, in Poland, that the town has been quarantined. The disease is now admitted to be epidemic in Kovno, Kaliss, Plock and Warsaw. In Constantinople, there are officially no cases, but the disease has been spreading rapidly throughout the city, no longer being confined to the poorer classes. Several of the foreign legations have left the city for more healthy quarters. On April 23d, 65 cases of "cholera" were reported to the health authorities of Lisbon, and on the following day 104. The disease is reported to be present in many villages in the interior.

THE D. HAYES AGNEW MEMORIAL.—The D. Hayes Agnew Memorial Committee, organized a year ago to secure a lasting memorial of Dr. Agnew in connection with the University Hospital, Philadelphia, report that subscriptions have been promised of sufficient amount to give reasonable assurance of the successful carrying out of this plan which includes not only a children's ward, but also an amphitheatre and ward class-rooms, with wards for men and for women,—the whole to be a model in perfection of details and completeness of appliances, and thus a fitting representation of the work of Dr. Agnew. The State Legislature, at its last session, made an appropriation of \$80,000 to the University Hospital for building purposes, provided that an equal sum of \$80,000 be raised by the friends of the Hospital. Of this sum about \$60,000 has already been raised, leaving only about \$20,000 more to be secured by May 1, 1894.

It is hoped to secure, in addition to this sum, a nucleus for an endowment fund for the new wing, which is to be given the name of D. Hayes Agnew.

SMALL-POX IN CHICAGO. — The small-pox epidemic in Chicago is at present assuming most threatening proportions. Throughout the early winter scattered cases were reported and cared for in the hospital, but during the last two months the cases have increased so rapidly that the health department has been entirely unable to control the spread of the disease. During March there were 308 cases, and at present there are 200 patients in the small-pox hospital, which is so crowded that many of the sick are sleeping on mattresses on the floor. Ten small-pox patients have been taken into the County Hospital, which is now quarantined with its 300 other patients, who cannot be discharged. Sixty patients are already quarantined in forty-eight private houses throughout the city for want of any kind of hospital to send them to. The house-to-house canvass shows a wide dissemination throughout the city, and the increase of cases during the last week was 126. The most seriously affected portion of the city is the southwestern section. In many cases the disease has not been reported until after death, the inspectors finding three bodies in one house last week.

ECHOES OF THE CONGRESS AT ROME.

AMONG other interesting facts gleaned from an Italian source we learn that there were consumed at the luncheon given at the Baths of Caracalla, six thousand bottles of wine, of which three thousand were champagne; eighty lambs; five hundred fillets of beef; one thousand chickens; twenty-two thousand sweet-cakes; twelve barrels (*caratelli*) of beer; and forty thousand rolls (*paynotelle*). This was accomplished by about ten thousand participants. The Italian accounts of the scene around the buffet at the reception given in the great Capitoline Hall read more like an epic rendering of an Irish wake than the story of a public official reception of the world's representatives of medical science in one of the oldest European capitals. But the reminiscences of that famous Berlin banquet at the last Congress should have prepared us for the possibility of these things. "Congressists" who have discussed and listened to many papers require much food and drink; and after all what is a *pasta dolce* and a *bicchierino di marsala* among one — especially after he has fought for it!

A CORRESPONDENT writes us of the absolute failure of the attempt made to organize a bureau of information for the members from the United States and Canada, where those who knew no Italian (the large majority) might be directed in their need. As none of the Italians even seemed able to give any information or to know anything about it at all, the attempt naturally came to an undeserved and lamentable end. As the *Medical Record* says, "A more go-as-you-please and never-get-there Congress was probably never held."

MR. RUSKIN has called opera as sung in Italy "the

vomiting up of hopelessly damned souls out of still carnal throats," but a theatre full of Congressists paid six dollars a seat to hear Verdi's "Traviata" poorly sung.

THE site of the Policlinico was not chosen for convenient reaching by the members of the Congress. It was well enough in Rome to take a cab out, but they did not wait during the meetings. One could readily ride out, *sed retrogrere gradum hic labor est*, along a newly-built and dusty Roman road — when there is no luncheon in one's stomach and no idea of what has really been said is within one's mind.

IT was a serious grievance to many of the wives of the members that they were not received by the Queen. They could not appreciate the etiquette which excluded them as not having been previously presented at Court.

AN INTERNATIONAL HONOR TO DR. MURPHY. — The International Medical Congress, in appointing its honorary presidents for the year, made Dr. J. B. Murphy, of Chicago, president for the United States.

A PROPOSED INTERNATIONAL PEDIATRIC ASSOCIATION. — During the International Medical Congress at Rome a meeting was held at the house of Dr. Blasi, President of the Section of Pediatrics, to arrange the preliminaries for the organization of an International Pediatric Association, one of the chief objects of which will be to improve the present methods and facilities for giving instruction in diseases of childhood.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the eight days ending at noon, April 25, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 36, scarlet fever 60, measles 22, typhoid fever 16, small-pox 3 (and 1 death). There are now seven cases of small-pox in the hospital. For the six days ending April 25th, 24 cases of small-pox were reported to the State Board of Health, 23 from Chicago and 1 from Holyoke.

A WARNING TO PHYSICIANS IN BOSTON. — Physicians in Boston and vicinity are warned against a swindler who calls in the doctor's absence with a pretended order to repair the rubber stamps.

AN OUTBREAK OF DIPHTHERIA IN WILLIAMSTOWN. — The Board of Health has closed the Centre school of Williamstown on account of the prevalence of diphtheria. This school includes high, grammar and primary grades.

ONE HUNDRED AND ONE YEARS OLD. — Mrs. Betsey Davis, of Mansfield, Mass., celebrated her one hundred and first birthday on April 18th. She was the daughter of an early French settler named Dansance, and the house in which she was born is still standing in Whiteville, a part of East Foxboro.

THE FIRST CONVICTION UNDER THE CONNECTICUT MEDICAL PRACTICE ACT. — The first case brought to trial under the new Medical Practice Act of Connecticut occurred last week at Waterbury, in

that State, when a "Dr." Helen Ashley Keene was fined one hundred dollars and costs for practising without a license. She has appealed to the District Court under bonds.

THE NEW ENGLAND CREMATION SOCIETY.—A meeting of the New England Cremation Society, which was made open to the public, was held in Boston on April 17th. The report of the Society shows a membership of nearly two hundred, among whom are sixteen physicians and five clergymen.

TYPHOID FEVER AT WINDSOR, VT.—A most serious epidemic of typhoid fever exists at Windsor, Vt., there being at present 180 cases. There have been eight deaths already. The serious nature of the situation can be appreciated when it is realized that the ratio of sick to the total population is about one to five or six. The investigation of the outbreak has given a most convincing, and it is to be hoped useful, lesson upon the danger of contaminated water-supply. In January last, a case of typhoid of doubtful origin occurred in a farm-house about 200 feet from the spring and brook which supply the town reservoir. The house stood about 80 feet above the level of the brook, and there was a natural surface drain from the house and out-buildings to the valley below. There is no evidence of any especial precautions having been taken during the illness of the patient to prevent the discharges being mingled with the usual drainage. During the spring thaws all these infected excreta found their way into the brook and the town reservoir. In March, several cases broke out in the village; and within a few days the disease was general and widespread. Since the undoubted pollution of the regular water-supply has been proved, the local Board of Health has issued a warning against the use of water from the town reservoir, and has supplied water from springs in other localities to families who have no wells of their own. Several cases of typhoid fever have occurred in neighboring towns, it is said, among those who derive their water in part from Windsor. Business and all social life are at a complete standstill, and the labor devolving upon the physicians and those not yet ill, has become most taxing. It is to be hoped that so plain a lesson will be remembered, and that in each of the hundred houses now visited care is taken that all the wells and other springs in the town are not further infected.

NEW YORK.

VACCINATING UNDER POLICE PROTECTION.—On the night of April 18th a corps of fifty vaccinators from the Health Department, escorted by one hundred policemen, made a descent upon what is known as Red Hook, a thickly populated tenement-house district of Brooklyn, and vaccinated five thousand people. The territory covered includes eight blocks, and two weeks ago the health officers attempted to carry out a similar crusade; but, as they were then unaccompanied by the police, the inhabitants resisted and drove them off the field with clubs and broomsticks.

WILLIAM A. CONWAY, M.D.—Dr. William A. Conway, Coroner's Physician, died at his residence, 270 East Broadway, on April 17th, after a month's illness. He was born in New York City in 1840. He received his collegiate education at St. Francis Xavier College, and in 1866 was graduated from the College of Physicians and Surgeons, New York. He was connected with the coroner's office for nine years, and had just entered his fourth term of office as deputy coroner. Dr. Conway had always practised in his native city, and was especially identified with the east side of New York, where he had grown up and where he was held in high esteem by a large circle of friends.

PHILADELPHIA.

PHILADELPHIA COUNTY MEDICAL SOCIETY AND THE CODE.—At a meeting of the Philadelphia County Medical Society, held April 18th, the following resolutions were adopted:

Whereas, The Code of Ethics of the American Medical Association declares it derogatory to professional character for a physician to dispense or in any way promote the use of a secret nostrum; and the American Medical Association, by a resolution unanimously adopted at its meeting in 1892, forbade the advertising of such nostrums in its journal; and

Whereas, The Journal of the Association has continued to advertise such nostrums, and, in defence of its course in this particular, has published an anonymous personal attack on a member of the American Association and of this Society;

Resolved, That the Philadelphia County Medical Society respectfully demands that the Trustees of the Journal shall in their public official acts respect the spirit and letter of its Code of Ethics, and that the columns of its Journal shall not be used for the anonymous personal abuse of members in good standing.

Resolved, That a copy of these resolutions be transmitted to the Medical Society of the State of Pennsylvania, and to the American Medical Association and to the weekly medical journals.

Miscellany.

DR. WILLIAM PEPPER'S RESIGNATION AS PROVOST OF THE UNIVERSITY OF PENNSYLVANIA.

DR. WILLIAM PEPPER has presented his resignation of the office of Provost in the following communication to the Trustees of the University of Pennsylvania:

With deep thankfulness I recognize that the University has reached a stage of development and prosperity which justifies me in laying down the high office you intrusted to me more than thirteen years ago, and which I have held as long as it was possible to combine the administrative labors of Provost with the demands of medical teaching and practice. This time has now passed, and I beg therefore to tender my resignation to take effect after the coming Commencement.

The close of the current session will witness the completion of the formative period of the University. From a group of disconnected schools there has been gradually organized a great academic body, complete in its unity and instinct with varied yet harmonious activities. Mutual

confidence and co-operation have developed a system strong enough for effective central control, yet so flexible as to admit affiliation with many separate organizations.

To our University is due the credit of establishing university extension in America, yet the important and successful society which controls this movement has no organic relations with the University, save that the Provost is *ex officio* the Honorary President. The Wistar Institute of Anatomy and Biology, a magnificent memorial of the founder of American Anatomy, has a separate charter and is not owned by the University, yet is governed by a Board the majority of whose members are appointed by yourselves. The University Hospital, which has grown so prosperously, is a special trust administered by a Board of twenty-two members, only four of whom are appointed by the Trustees of the University.

The Department of Archæology and Paleontology, under whose energetic operations there is developing rapidly a Museum of high rank, is governed by a Board of not less than thirty-six members, of whom only six are appointed by the Trustees of the University. Reference is made to these familiar instances to illustrate the admirable results which may develop under a system which excludes rigid control, and rests upon mutual confidence and a common devotion to a great cause.

It has been a chief aim of your Board to demonstrate to the people of this great Commonwealth that the University is truly the voluntary association of all persons and of all agencies who wish to unite in work for the elevation of society by the pursuit and diffusion of knowledge and truth. No less important has been the establishment of the principle that the University, so far from being a private and exclusive corporation, is essentially and organically a part of the municipality. The large future of the University was secured when, in 1872 and in 1883, City Councils voted, without a dissenting voice, the transfer to the University of splendid tracts of ground in consideration of the establishment in perpetuity of fifty free beds in the Hospital for the poor of Philadelphia, and of fifty prize scholarships in the College, to be awarded to graduates of the public schools of Philadelphia. The subsequent accessions of territory which have brought the domain of the University up to fifty-two acres, in a compact body in the centre of the city, have been the logical consequences of these great steps; and so faithfully have all the trusts and conditions been executed, that it has come to be recognized by the municipal authorities that it is more profitable to the city to give freely to the University anything in its power to bestow which is needed for the development of that institution than to dispose of it elsewhere even at a great price. It needs only the resolute continuance of this wise policy to secure for the University full recognition as a branch of the City Government with a duly accredited representative of its great constituency in her Councils.

Progress has also been made toward the establishment of the essential principle that the University is in right, and should be in fact, the head of the educational system of the entire Commonwealth. We may fairly claim to have done much toward securing a recognition of the view that the encouragement of higher education, by the municipality and the legislature, is as proper and important in the older communities of America as it has been decided to be in the newer States.

While the unification of the University and the establishment of broad lines of policy may seem to be the most important work of the past thirteen years, it will be found that the resources of the University and the educational work in each department have been successfully promoted. In 1881 its property was fifteen acres, while at present there are owned or controlled by the University, in a continuous tract and solely for educational purposes, not less than fifty-two acres. The value of the lands, buildings and endowment in 1881 may be estimated at \$1,600,000; it is now over \$5,000,000. Prior to the date of the late John Henry Towne's great bequest, the University had never received a single large gift or legacy. During the current year ending September 1, 1884, there will be ac-

quired in lands, buildings, money and subscriptions not less than \$1,000,000. The members of the teaching force in 1881 numbered 88, and the students in all departments 981; at this time the former are 268, and the attendance has reached 2,180, representing every State of the Union and no less than thirty-eight foreign countries. The College Department has attained a national distinction, and its complete reorganization, which has now been accomplished successfully, gives sure promise of sound and rapid progress. The Medical School has been advanced to pre-eminence in equipment and prosperity, while plans now maturing will place it abreast of the great schools of Europe. The Law School has effected the prolongation and elevation of its curriculum, and has deservedly won national repute. Encouraging progress has been made toward providing an admirable building on an approved site, so that the future eminence of the school is assured. Gratifying reports may be made of the position of the Dental and Veterinary Departments; and well-considered plans for their still further development need only time for their fulfilment. Upon this vigorous basis rests the Department of Philosophy, which, although organized as late as 1884, and still without special endowment, has already one hundred and fifty-four students. It represents the University in its highest and best intellectual life; it affords inspiration to teachers and students; it has enabled us to extend the richest privileges of the University to women on equal terms with men; it points the way to large endowment of rich research and advanced scholarship.

The necessity of dormitories to the development of the best university life has come to be clearly recognized by your Board, and generous friends stand ready to supply this important need.

It is pleasant, in these days of strength and prosperity, to reflect upon those of doubt and struggle, when ridicule met the assertion, the truth of which is now freely conceded, that nowhere can a great university be developed so favorably as in a great city.

In closing my term of service as provost, I may be permitted to allude to the motives which impel me to this step. The labor of these thirteen years has been so severe, in connection with my professional duties in the Medical School, and with the extensive medical practice necessary to provide the funds which have enabled me to initiate nearly all of the large movements undertaken during this time, that I have often felt that my life was specially preserved for the work. It has, however, been growing evident, for several years past, that the time was approaching when the immense extent of the University interests would demand the undivided activity of the most energetic man. It has now become necessary for me to choose between administrative work and medical science. My devotion to the latter has determined the choice.

No official has ever been associated with more affectionate and indulgent colleagues, or has enjoyed more loyal co-operation than has been extended to me. I am confident that the choice of my successor will be wisely and promptly made. I do not leave the service of the University, but will remain, with more free hands, ready to serve her every interest with utmost devotion.

I invoke upon your continued labors in the government of this grand institution the richest blessings of Almighty God, who has in the past so signally guarded it.

THE SEWAGE SYSTEM IN FITCHBURG.

THE sanitary relations of one community to another are in no wise different from those of individual persons. A man is safe from filth disease if he himself, his house, and his surroundings are clean; but, it is little security for him to know that his own house is properly plumbed, if his sewage enters a sewer without any outlet, or his next-door neighbor enters all his

waste sewage into a sluggish-flowing brook which runs by his premises. With cities it is the same. The increasing intercommunication of our cities and towns — in the way of business, especially in supplying food or milk, the one to the other — makes the sanitary arrangements which shall prevent an outbreak of typhoid or other communicable disease in any town a matter of no small interest to a wide circle of settlements. A recent address of Dr. C. W. Spring, the city physician of Fitchburg, Mass., calls attention to a state of matters which might well be seriously considered. He says:

"The system of sewage disposal in Fitchburg, if such a process can be called a system, is to discharge the sewage, and almost everything else that is not needed, into the Nashua River. The river entering the town at its south-westerly corner, is a small stream, which is soon increased in size by the junction of two brooks. From a point above these tributaries, at the extreme upper end of the city, to South Fitchburg, a distance of about 6.8 miles, the river has a fall of about 275 feet. The valley through which the river flows is quite narrow, and along its banks is located the greater part of the population of the city. Within this distance the river receives the sewage of some 20 miles of sewers from 21 separate openings, and the refuse, in whole or in part, of 13 paper mills, 3 worsted mills, 8 yarn mills, 1 cotton-batting mill, 5 gingham mills, a gas works, various machine shops, and many other establishments of various kinds — to say nothing of the large amount of rubbish which is thrown directly into its waters. Below the city the valley widens, and the river is joined by Baker's Brook, which though it drains an area about one-fourth as large as that drained by the main stream, is almost free from sewage pollution."

The pollution of the river is well shown by the summary of analyses made at different points along its course. Shortly after reaching the city the river water begins to assume its characteristic milky appearance. The total solid matter, both dissolved and suspended, is 8 parts in 100,000, and the number of bacteria for each cubic centimetre is 496. Shortly after being joined by the first brook the water contains 16 parts of solids and 7,600 bacteria. For a short distance there is slight improvement, but the pollution rapidly increases, lower in the city, to 17 parts of solids and 45,600 bacteria, to 21 parts of solids with 56,400 bacteria, until half a mile below the last paper mill the maximum pollution is reached — the water being thick, muddy and offensive to the smell, the solids reaching 23 parts and the number of bacteria 111,600. The increase in pollution in the fifteen years from 1876 to 1891 was nearly 300 per cent.; the figures showing in 1876 an increase between the most northern and southern points in the river from 2.64 to 7.46, and in 1891 from 7.50 to 20.50.

"The Nashua River is not, however, the only stream in the city which is made a public sewer. Punch Brook has long been, and now is, a public nuisance. It receives a large amount of sewage, either directly or indirectly, and running as it does often concealed from view, and underneath houses, its danger is all the greater. If it was open its whole distance its waters might become a little less foul from the natural oxidation which would take place by contact with fresh air. It is hardly necessary to say that such a nuisance should be abated."

A BILL TO PROVIDE FOR THE REGISTRATION OF PHYSICIANS AND SURGEONS IN THE STATE OF MASSACHUSETTS.

THE following bill has been passed by the Massachusetts Senate:

SECTION 1. The governor, with the advice and consent of the council, shall appoint seven persons, resident in this Commonwealth, who shall be graduates of a legally chartered medical college or university having the power to confer degrees in medicine, and who shall have been actively employed in the practice of their profession for a period of ten years, who shall constitute a board of registration in medicine. Such persons shall be appointed and hold office for terms of one, two, three, four, five, six and seven years, respectively, beginning with the first day of July in the present year, and until their respective successors are appointed, and thereafter the governor, with the advice and consent of the council, shall appoint before the first day of July in each year one person qualified as aforesaid to hold office for seven years from the first day of July next ensuing. No member of said board shall belong to the faculty of any medical college or university. Vacancies in said board shall be filled in accordance with the provisions of this act for the establishment of the original board, and the person appointed to fill a vacancy shall hold office during the unexpired term of the member whose place he fills. Any member of said board may be removed from office for cause by the governor with the advice and consent of the executive council, and not more than three members of said board shall at one time be members of any one chartered State medical society.

SECT. 2. The members of said board shall meet on the second Tuesday of July next, at such time and place as they may determine, and shall immediately proceed to organize by electing a chairman and secretary, who shall hold their respective offices for the term of one year. The secretary shall give to the treasurer and receiver-general of the Commonwealth a bond in the penal sum of five thousand dollars, with sufficient sureties to be approved by the governor and council for the faithful discharge of the duties of his office. The said board shall hold three regular meetings in each year, one on the second Tuesday of March, one on the second Tuesday of July and one on the second Tuesday of November, and such additional meetings at such times and places as it may determine.

SECT. 3. It shall be the duty of said board immediately upon its organization to notify all persons practising medicine in this Commonwealth of the provisions of this act by publication in one or more newspapers in each county, and every such person who is a graduate of a legally chartered medical college or university having power to confer degrees in medicine, and every person who has been a practitioner of medicine in this Commonwealth continuously for a period of three years next prior to the passage hereof, shall upon the payment of a fee of one dollar be entitled to registration, and said board shall issue to him a certificate thereof signed by the chairman and secretary.

SECT. 4. Any person not entitled to registration as aforesaid shall, upon payment of a fee of ten dollars, be entitled to examination, and if found qualified by four or more members of said board shall be registered as a qualified physician and shall receive a certificate thereof as provided in section three. Any person refused registration may be re-examined at any regular meeting of said board within two years of the time of such refusal, without additional fee, and thereafter he may be examined as often as he may desire upon the payment of the fee of ten dollars for each examination. Said board, for criminal cause shown and after hearing, may by unanimous vote revoke any certificate issued by them and cancel the registration of the person to whom the same was issued. All fees received by the board under this act shall be paid by the secretary thereof into the treasury of the Commonwealth once in each month.

SECT. 5. The compensation, incidental and travelling expenses of the board shall be paid from the treasury of the Commonwealth. The compensation of the board shall be ten dollars each for every day actually spent in the discharge of their duties, and three cents per mile each way for necessary travelling expenses in attending the meetings of the board, but in no case shall any more be paid than was actually expended. Such compensation and the incidental and travelling expenses shall be approved by the board and sent to the auditor of the Commonwealth, who shall certify to the governor and council the amounts due as in case of all other bills and accounts approved by him under the provisions of law: *provided*, that the amounts so paid shall not exceed the amount received by the treasurer and receiver-general of the Commonwealth from the board in fees as herein specified, and so much of said receipts as may be necessary is hereby appropriated for the compensation and expenses of the board as aforesaid.

SECT. 6. The board shall keep a record of the names of all persons registered hereunder, and a record of all moneys received and disbursed by said board, and said records or duplicates thereof shall always be open to inspection in the office of the secretary of the Commonwealth. Said board shall annually

report to the governor, on or before the first day of January in each year, the condition of medicine and surgery in this Commonwealth, which report shall contain a full and complete record of all its official acts during the year, and shall also contain a statement of the receipts and disbursements of the board.

SECT. 7. It shall be the duty of the board to investigate all complaints of disregard, non-compliance or violation of the provisions of this act, and to bring all such cases to the notice of the proper prosecuting officers.

SECT. 8. On and after the first day of January, in the year eighteen hundred and ninety-five, the board shall examine all applicants for registration as licensed physicians or surgeons in this Commonwealth. Applicants must give satisfactory proof of being twenty-one years of age and of good moral character; and every applicant who is a graduate of and has received a degree of M.D. from a legally chartered medical college or university having power to confer degrees in medicine in this Commonwealth, shall be entitled *prima facie* to be registered under this act upon payment of the fees herein provided.

SECT. 9. Examinations shall be, in whole or in part, in writing, and shall be of an elementary and practical character. They shall embrace the general subjects of surgery, physiology, pathology, obstetrics and practice of medicine, and shall be sufficiently strict to test the qualifications of the candidate as a practitioner of medicine.

SECT. 10. Whoever not being registered as aforesaid, shall advertise or hold himself out to the public as a physician or surgeon in this Commonwealth, by appending to his name the letters "M.D.," or using the title of doctor, meaning thereby a doctor of medicine, shall be punished by a fine of not less than one hundred nor more than five hundred dollars for each offence, or by imprisonment in jail for three months, or both.

SECT. 11. This act shall not apply to commissioned officers of the United States Army, Navy or Marine-Hospital Service, or to a physician or surgeon who is called from another State to treat a particular case, and who does not otherwise practise in this State, or to prohibit gratuitous services; nor to clairvoyants, or to persons practising hypnotism, magnetic healing, mind cure, massage methods, Christian science, cosmopathic or any other method of healing; *provided*, such persons do not violate any of the provisions of Section ten of this act.

SECT. 12. For the purposes of the appointment of said board, and of registration of persons by it hereunder, this act shall take effect upon its passage, and shall take full effect on the first day of January in the year eighteen hundred and ninety-five.

PROFESSOR TYNDALL.

PROFESSOR HUXLEY¹ draws the following clear picture of Tyndall's character, at the time when he first became acquainted with him:

"My elder by some five years, Tyndall's very marked and vigorous personality must have long taken its final set when we foregathered in 1851. But I found my new friend a difficult subject — *incerta sedis*, as the naturalists say; in other words, hard to get into any of my pigeon-holes. Before one knew him well, it seemed possible to give an exhaustive definition of him in a string of epigrammatic antitheses, such as those in which the older historians delight to sum up the character of a king or leading statesman. Impulsive vehemence was associated with a singular power of self-control and a deep-seated reserve, not easily penetrated. Free-handed generosity lay side by side with much tenacity of insistence on any right, small or great; intense self-respect and a somewhat stern independence, with a sympathetic geniality of manner, especially toward children, with whom Tyndall was always a great favorite. Flights of imaginative rhetoric, which amused (and sometimes amazed) more phlegmatic people, proceeded from a singularly clear and hard-headed reasoner, overscrupulous, if that may be, about keeping within the strictest limits of logical demonstration; and sincere to the core. A bright and even playful companion, Tyndall had little of that quick appreciation of the humorous side of things in general, and of one's self in particular, which is as oil to the waves of life, and is a chief component of the

worthier kind of tact; indeed, the best reward of the utterer of a small witticism, or play upon words, in his presence, was the blank, if benevolent, perplexity with which he received it. And I suppose that the character-sketch would be incomplete, without an explanation of its peculiarities by a reference to the mixture of two sets of hereditary tendencies, the one eminently Hibernian, the other derived from the stock of the English Bible translator and Reformer."

MEASLES AND THEOLOGY.

ABOUT two years ago a curious incident was reported from a Swiss village, regarding an epidemic of measles which attacked the children only of Catholic parents. A repetition of this doctrinal distribution of disease is now reported by Dr. Gryglewicz, of Jutroschin.¹

Under the date of January 11th, he writes that for three weeks there had been a sharp epidemic of measles, and in all that time he had found the disease only among Catholic children. Some grades of the Catholic schools were closed as over eighty per cent. of the pupils were ill. Upon inquiry among the evangelical schools, it was found that not a child was absent. In his practice, he had seen no Protestant children ill. The 2,000 inhabitants of Jutroschin are about evenly divided between Catholics and Protestants; and there are about 150 Jews in the town, among whom there was one case of measles. No explanation of this curious occurrence has yet been found. If in the future the present difficulties of bacteriological etiology and diagnosis are to be further involved by theological and denominational difficulties, the path of the advancing scientific physician will be no easy road to fact or fame.

THE HINDU SYSTEM OF MEDICINE AND THE SECRET OF SUCCESS IN PRACTICE.

THE eighth fascicle of the *Charaka-Samhita* contains a most interesting account of the basis of the Hindu system of medicine as it includes a classification of all illnesses. "Diseases that occur are of four kinds: first, accidental, as wounds inflicted by nails, or falls, incantations, curses, assaults of evil spirits, acts of violence, binding, cords, burns and lightning. All other diseases are constitutional, and have three classes due to disorders of wind, bile and phlegm. Accidental diseases arise at first with pain, and afterwards cause disorders of wind, bile and phlegm. In constitutional diseases, wind, bile and phlegm in the first instance become disordered and afterwards lead to pain.

"The respective divisions of the body that constitute the seats of the three faults are as follows: The hypogastric or pubic region, the place where the feces collect, the regions about the loins, the thighs, the feet, and the bones, are the seats of wind. That portion of the stomach, however, where digestion goes on, among the seats of wind, is in particular the seat thereof. Sweat, the thorax saliva, blood, and that portion of the stomach where undigested food remains, are the seats of bile. Amongst these all, the last is especially the seat of bile. The thorax, the head, the throat, and all the joints, that portion of the stomach

¹ Popular Science Monthly, March, 1894.

¹ Deutsche Med. Zeitung, 1894, No. 29.

which holds the undigested food, and the fat, are the seats of phlegm. Amongst these all, the thorax is especially the seat of phlegm. Verily, wind, bile and phlegm wander over every part of the body. In their normal or unexcited state they produce beneficial results, such as growth, strength, good complexion and clearness of senses. When not in their normal state, they produce many evil consequences called disease."

There then follows a most extended nosology of the diseases due to those three causes, from which it is readily perceived that wind, bile and phlegm are used as technical terms implying certain states of the physical constitution and not at all in the ordinary sense of atmosphere, hepatic secretion or mucous exudations. Having carefully enumerated each with its appropriate treatment, the eighty diseases of wind, the forty of bile, and the twenty most common of the innumerable diseases due to phlegm, the writer closes with the following injunction to the reader:

"The diseases should first be carefully ascertained. After this, the medicine to be applied should be carefully selected. Subsequent to this the physician should, with full knowledge of consequences, commence the treatment. That physician who, without carefully ascertaining the disease, commences the treatment, seldom meets with success even if he be well conversant with medicines and their application. That physician who is well conversant with the features of disease, who has a thorough acquaintance with all medicine, and who has knowledge of the considerations dependant upon time and place, achieves success without doubt."

Correspondence.

[Special Correspondence.]

LETTERS FROM ROME.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

ROME, April 10, 1894.

MR. EDITOR.—A few words relative to the Eleventh International Medical Congress just closed in Rome may be of some slight interest to your readers. In some respects the Congress was as much of a success as can be expected of such large and democratic medical assemblies. About 7,000 physicians were registered from all over the world and about 1,500 guests, a larger number than was at Berlin at the last meeting. American physicians were more conspicuous by their absence than by their presence, not quite 200 being on the list, while at Berlin there were over 600. Those who sailed from New York on March 17th, with the expectation of landing in Genoa on the 28th, among whom was Dr. Jacobi, the chairman of the American delegation, were doomed to disappointment. Although the *Kaiser Wilhelm* left her dock promptly at seven o'clock in the morning, she as promptly ran on to the bar in the harbor, and lay there seven or eight hours, thus causing us to lose a day. Over thirty of her passengers were physicians, and they did not reach Rome until Friday, too late for the opening exercises, which took place on Thursday in the presence of the King and Queen of Italy, and a large assemblage completely filling the Costanzi Theatre. Signor Crispi made the address of welcome on the part of the king, Dr. Baccelli followed in a Latin discourse, and Prince Ruspoli greeted the members "in the name of the city of Rome." Virchow gave an admirable paper on the growth of medical science, laying especial emphasis upon "Morgagni and his influence upon anatomical thought."

During the Congress notable addresses were made by

Nothnagel of Austria, on "Modifications of the Organism in consequence of Pathological Alterations"; Bouchard, "On Fevers"; Professor Babes, of Bucharest, "The State in its Relation to the Results of Modern Bacteriological Researches"; Stovis, on "Chemistry and Materia Medica"; Kocher, on "Projectiles and their Effect upon the Wounded." Dr. Murphy, of Chicago, created a very favorable impression with his paper on "Cholecystenterostomy, Twenty Successful Cases"; he also reported 145 laparotomies for appendicitis. Dr. Link, of Terre Haute, Ind., presented a paper in which he claims to have proved by experiments on dogs, as well as by clinical experience, that at least three inches of the tibia and fibula with the periosteum may be removed, as in a compound and comminuted fracture, and new bone be formed *without shortening*! The dressing consists of old linen and thin wooden splints, which are not removed till the patient is well. He lays great stress upon frequent and long-continued douching with water as hot as can be borne. Dr. Turk, of Chicago, read a paper upon the value of swabbing out the stomach with a sponge. He demonstrated his method upon a man said to have a dilated stomach. The apparatus consists of a wire about three feet long with a sponge looking not unlike a sponge tent, about two and a half inches in length by three-fourths of an inch in diameter, fastened to one end. The wire protected by rubber tubing is attached to a rotary machine resembling an egg-beater, or a hand-drill. On introducing the wire into the stomach and turning the handle the sponge is made to revolve rapidly, and can be felt externally in a thin person. Dr. Turk claims that he can thoroughly cleanse not only the stomach in this manner, but that he also pushes the sponge into the duodenum. The patient bore the manipulation very well indeed, often turning the crank himself! There was no vomiting attending the demonstration. We were given to understand that this method is in daily use in the doctor's practice.

The scientific work of the Congress was done in sections, there being seventeen or more of them. As over 4,000 papers were presented, it may be easily imagined that the work of some of the sections was hurried and hence unsatisfactory. An idea may be formed of the work crowded into some of the sections from the fact, that in the official list 50 papers would be put down for one day in physiology, 25 in anatomy, 36 in pathology and pathological anatomy, 43 in obstetrics and gynecology, 93 in surgery, and 124 in internal medicine. The papers were not repeated from day to day in the list. I am told that some rather startling jumps were made in some of the lists, in one instance going from No. 4 to No. 92. The sections began work at eight o'clock in the morning and the general sessions, held a mile away, at four in the afternoon.

The exhibit of surgical instruments and appliances was not as extensive as at Berlin. One noticeable article in the collection was an operating-table made by Stille, of Stockholm, which was adjustable to many positions, and, while being strong and firm, was yet simple and free from complicated contrivances, so liable to get out of order or to refuse to work at critical moments. The electrical exhibit was quite good, a hand-light for the throat being very noticeable.

The social part of the Congress was by no means slighted. Perhaps the most satisfactory feature was the garden-party given at the palace by their Majesties, the King and Queen. At least, it was satisfactory to those who were fortunate enough to receive invitations. The ladies were handsome, the dresses were beautiful, the music by two bands was fine, the weather was perfect, their Majesties were gracious; and upon this occasion, which was almost the only one of which that can be said, the crowd was not too large. The reception given at the Capitol by the city was a great success as regards numbers, elegant toilets, etc. The climax, however, was reached on the last day of the Congress, when a lunch was served at the Baths of Caracalla. Tables were set for about a thousand, while several thousand were present. The struggle to get something to drink—or eat—which took

place about those two tables may be imagined. The position of the two waiters, who were pelted with hard rolls of bread and an occasional plate, was not an enviable one. The crowd was jolly, good-natured and noisy. It almost seemed to be a fit occasion for a repetition of the miracle of the loaves and fishes.

The festivities wound up with a "Battle of Roses" upon the "Corso" in the afternoon, and a torch-light procession in the evening. To those not familiar with the famous carnivals of Rome, it may be said that the "Battle of the Roses" consists of crowds of people in carriages and on foot, promenading up and down this, one of the principal streets, and throwing flowers to whomsoever they choose. When friends meet the scenes are often animated and exciting. The windows are crowded, as well as the streets; everybody is happy, and to a stranger the scene is a novel and interesting one.

The Italians seem highly pleased at the success of the Congress, and certainly great efforts were made by them to make it a success. There were rumors that the next meeting would be held at St. Petersburg.

Very truly yours,

GEORGE W. GAY, M.D.

A FEW NOTES ON ROME AND THE LATE INTERNATIONAL MEDICAL CONGRESS.

ROME, April 6, 1894.

MR. EDITOR:—A little more than two years ago, (Oct. 8, 1891), it was my privilege to have a short communication published in the columns of the veteran *Boston Medical and Surgical Journal*, on "Rome, Her Sanitation and Her Facilities for Holding a Polyglot Medical Congress," in which I ventured to predict, from what I could then learn from a tour through the Eternal City and her suburbs, that though the medical brethren might mobilize from every point of the compass, over all those roads which lead to Rome, yet the old city could abundantly and comfortably provide for all; that the city was well drained, healthy and delightful at every season of the year, though she was at her best in the early spring.

Well! the weary pilgrims came; they have held their Congress, and again scattered, over land and water, to their own countries. All were well-fed and housed, at moderate rates. All were received with a royal welcome, in which the King himself and his beautiful Queen actively participated; luncheon parties and banquets were held on a munificent scale; transportation of every kind was accessible and moderate; and more than five thousand visiting medical practitioners and their friends have left for home without any serious cases of illness developing which could be ascribed to local causes.

Never before did the medical profession, to a greater extent or in a more substantial manner, demonstrate to the world its cosmopolitan character and its integral common brotherhood.

Here, they massed, many of the most eminent and distinguished members of their profession, to offer from a common altar, the fruit of their life-long studies, observations and investigations, not for the benefit of any sect, nation or race, but for the alleviation of the sufferings, and for the well-being of all humanity. The Policlinico, the building in which the Congress convened, was well adapted for the purpose. In it eighteen sections daily convened and all the national committees assembled simultaneously. It consisted of a series of eight large, two-storied, lofty pavilions, with superb marble stair-ways, large windows and porticos, and immense areas or courts for light and ventilation. It is intended, as its designation intimates, to be the principal Infirmary and centre for teaching for all Italy. Its capacity when complete will be for about fourteen hundred beds, which, with the extensive laboratories and spacious operating-theatres and lecture-rooms, will be one of the best-equipped institutions for teaching in all Europe.

The only possible objection to it, as a visiting place, was its distance from Piazza-Colonna, or the centre of the city—about two miles—and because of its newness it was yet rather damp and chilly.

The language most generally spoken at the Congress was French. All the Italian doctors seem to have a speaking knowledge of this tongue, and even the Spaniards from South America could make themselves readily understood, through its employment. German came second, although the Germans did not attend in very large numbers. English came in a poor third; and he whose linguistic capacity was limited to this language, was at a great disadvantage. It might be stated, without fear of over-stating the truth, that English-speaking readers were barely tolerated. Essayists who read English or discussed contributions, were restrained within the severest limits; while the French, Italians and Germans had *carte blanche* and consumed as much time as they liked. Perhaps the Romans were not so much to blame for this, as the French element was there in great strength, and seemed to vastly predominate in influence. Moreover, there seemed to be a disposition on the side of both Italians and French to re-establish the old *entente cordiale* so long interrupted.

The attendance from the United States was not large, nor representative of the leading members of the profession. This, no doubt, was attributable to the season of the year, when all the schools were in session, and many famous teachers were unable to be present. In the committee rooms of the American delegation, however, one hundred and seven registered; the greater number of them being from the West and South. But our army, navy and marine-hospital services were amply represented by medical officers of advanced rank, who attended the sessions in full uniform.

The general sessions were held in the Eldorado on the via Genova, every afternoon during the five days of the Congressional sessions, at three in the afternoon. Here, only on the last day, was America accorded the privilege of entertaining the assembled multitude with a public address. This was presented by Dr. Abram Jacobi of New York, whose effort was well worthy of the distinguished speaker and the country of his adoption.

As might be expected, the scientific portion of it dealt chiefly with the maladies of children; but, as he proceeded, he considered the present status of the healing art in the United States, and dealt the over-specializing tendencies of modern times some crushing blows. The reckless, useless mutilations so often practised, at present, as current operations, he declared were little short of murder; and he anathematized the performers of them as those whose hands were so stained that no amount of sterilization could purify; and whose souls were so corrupted that no chemical fluid could preserve or restore them. Modern antipyretics he declared had killed more than they cured, and the profession was responsible for the position which proprietary medicines occupied.

One feature of the Congress, of interest to Americans, and which did good service for our scattered delegates, was the organization of the American Delegation, in Section C of the Polyclinic. Here the delegates from the United States and Canada organized a bureau for information, with Dr. Abram Jacobi for President, Dr. Thomas H. Manley, of New York, Dr. William Tobin, of Halifax, and Dr. G. A. Simmons, of Sacramento, Cal., as an Executive Committee, and Dr. Douglas H. Stewart, of New York, as Secretary.

During their second day's session the delegation was visited by the American Ambassador to Italy, the Hon. Wayne McVeagh, who made a short address, in which he declared that it afforded him great pleasure to meet the American contingent. He bespoke for them a hospitable reception from their Italian *confrères*, and reminded the delegates that he would be ready to serve them at any time during their stay, by every possible means within his power.

In conclusion it may be said that while the late Congress did not in every particular fulfil all that was expected

of it, yet, considering the many difficulties in the way, the anticipations of the majority were more than realized. At all events, when it is remembered that the English, French and Italian railways reduced their travelling rates for passengers fifty per cent., and that an opportunity was permitted to visit the principal cities and hospitals of Europe *en route*, the time consumed by the Americans was not mispent, and they will return to their homes with renewed energy after their short holiday, and all the better equipped for the duties which await them on their arrival.

UN VOYAGEUR.

THE PROPOSED REDUCTION IN THE ARMY MEDICAL SERVICE.

GROVELAND, MASS., April 10, 1894.

MR. EDITOR:—I noticed your correspondent's anonymous communication (April 5, 1894), signed "Medicus," concerning the "Proposed Reduction of the Army Medical Corps," with a secondary title, "An Attempted Legislative Outrage!" I do not like to reply to, or even notice, any communication in which the author, for certain reasons best known to himself, conceals his name.

The statement concerning acting assistant-surgeons, which title pleases not your grumbling incog. (who is probably a member of the Medical Corps) that "there is no provision of law whereby they (acting assistant-surgeons) can be placed in charge of the medical department at a military post," is either a malicious lie or an ignorant assertion of erroneous views. In either case it is untrue. There are some younglings, bursting with importance, who know little of military medical history in this country, particularly during the late Civil War, who *pretend* to imagine that by scorning acting assistant-surgeons as "contract-doctors" they in some measure increase their own prominence. It would take too much of your time to name hundreds of prominent medical men who were once acting assistant-surgeons to the United States Army. These and their associates have all "been placed in charge of the medical department at a military post" time and again. Some have served as acting medical directors of a department, some in charge of large hospitals, camps, transports, etc. Some preferred capture in battle rather than to desert their wounded. If "Medicus" will read the records of the Association of Acting Assistant-Surgeons, United States Army, he will learn the history of many medical men who have become eminent in medical history, and whose position socially and professionally is *equalled by few* of the so-called regular officers of the medical department, who are so well paid and yet have so little to do.

Prominent generals of the army and prominent members of the army medical department have gladly offered their testimony in favor of the bill for the acting assistant-surgeons which has been lately presented to Congress. Your own kindly notice of the Association of Acting Assistant-Surgeons in a recent number of the JOURNAL reflects the best professional opinion concerning them.

For some years an influence has been exerted by a selfish clique, under the leadership of the Surgeon-General's Office, to make the way of the acting assistant-surgeon a hard road to travel. Any one acquainted with the true facts must have seen how pernicious and unmanly this influence has been. The acting assistant-surgeon has invariably accepted the duties of military medical life with the miserable pay offered, and he has also known the perilous detail, when the more favored surgeon remained comfortably at home and received the extra fees from outside practice.

In my opinion, the sneers and misinformation contained in the communication of "Medicus" are unwarranted, unkind and ungentlemanly, and deserve to be disapproved of by all medical men. I have known the acting assistant-surgeons for over a quarter of a century, and I have always found them faithful, competent and honorable, deserving a much better status. It is very remarkable that members of a medical corps so well paid (much better paid

than the medical officers of any other army) should attempt to persecute reputable medical officers who perform the same duties, and with exactly as much skill as the more favored members of the so-called Medical Corps.

Little can be hoped for, so far as justice is concerned. Acting assistant-surgeons who have faced the perils of Indian warfare are just as much heroes as those who served in the war of the Rebellion. An acting assistant-surgeon is peer of any medical officer, and from real men and true gentlemen receives every courtesy.

Yours truly,

W. THORNTON PARKER, M.D.

NEW YORK, April 15, 1894.

MR. EDITOR:—In a recent number of the JOURNAL I called attention to the legislative outrage now being attempted in Congress of cutting off from the Medical Corps of the Army thirty-five of its members, on the buncombe plea of economy, and in spite of the strenuous objections of the Surgeon-General, Dr. Sternberg, and the commander-in-chief of the United States Army, Gen. J. M. Schofield, both of whom have clearly shown that these men are really needed. As General Schofield put it in a letter to the Secretary of War, dated March 15, 1894, this pending bill would be "seriously injurious to the military service"; also, "the Medical Corps of the Army is none too large for the necessities of the service."

I am therefore surprised that any self-respecting doctor could write in defence of this measure, so utterly unworthy of support. Indeed, not alone the *Boston Medical and Surgical Journal*, but following it, the *New York Medical Journal*, the *Philadelphia Medical News*, the *New York Medical Record*, and many more of the most influential and able medical publications of this country, have recently published vigorous editorial denunciations of this insult to our profession: a measure which, if successful, will result at once in stopping the working of the new Army Medical School, which, under General Sternberg's able lead, is doing such scientific work among the younger surgeons in the army, educating them in sanitation of military hospitals and troops, commissary knowledge, bacteriology, military surgery, etc.

The tone, the evident animus, of the gentleman who has seen fit to honor me with his attack deprives his letter of weight, even aside from its misstatements. Nevertheless, let me point out to your readers, Mr. Editor, the fact that he seems to regard this bill as one which, if it passes, dropping thereby thirty-five regular medical officers, will enable contract-doctors to take their places; and he looks upon my letter as an onslaught against contract-doctors in general, whom he proceeds to defend.

There is not a line, not a word, in my letter to justify this excited rhetoric.

What I said in this context is as follows: "There is now no appropriation made for contract-doctors, though formerly this was the case; and even if there were, *there is no provision of law whereby they can be placed in charge of the medical department at a military post*. Therefore, they cannot take charge of the discipline and field-drill of the Hospital Corps detachment, nor be responsible for the post-hospital with its supplies. To effect economy as far as practicable, the Surgeon-General has long employed only private physicians at all the arsenal-posts in the country, these being small ones."

The doctor attacking my letter denies the truth of the statement which I have put in italics, and becomes vituperative thereupon regarding my ignorance.

Let me reply that this statement was made by me upon authority of the words of the Surgeon-General himself. Indeed, every figure, every assertion in my letter was absolutely accurate, having been furnished me by one of the medical officers of highest rank in the army, and with a view to publication.

Whatever powers the contract-surgeons had during war times, the fact as to the law *to-day* is precisely as stated in my letter. If this gentleman who went off at half-cock, and loaded only with blank cartridge, will apply to Sur-

geon-General Sternberg for much-needed information, every word that I have stated will be corroborated.

In conclusion, Mr. Editor, allow me to say with reference to the remarks on anonymous contributions, that you were furnished with my name, and had you seen fit, could have signed it to my letter. Very properly, you did not regard my own personality as one that had anything to do with the question at issue, which is not a personal matter, but one affecting the well-being of forty-three thousand soldiers and civilians in the army, with their wives and children, and also involving the self-respect and dignity of the noblest of professions.

Very respectfully,

ROBERT H. M. DAWBARN, M.D.,
105 West 74th Street.

PERFORATING WOUND OF THE HEART.

BALTIMORE, MD., April 20, 1894.

MR. EDITOR:—Seeing a case reported in the JOURNAL from California, where a pistol-ball went through the heart and the man lived thirteen hours after the injury, reminds me of a case which I reported to the Baltimore Clinical Society in the year 1889.

It was that of a woman, age about twenty-two years, who was stabbed and thrown from her husband's knee to the floor. She died six days and fifteen hours after receiving the wound and the blow. It was shown post-mortem, ten hours after death, that a wound in left breast to the right of left nipple, between the third and fourth ribs, passed through the pericardium, making a slit one inch in length. In the pericardium, two tablespoonfuls of partly-clotted blood were found. The wound then entered the right ventricle a little to the right of the ventricular septum, passing entirely through the anterior portion of the ventricle, being about a half-inch long on its outer aspect and about one-quarter of an inch on the inner side. On the outer side of the heart there was a thin layer of lymph, and through the opening made in the heart there was a solid plug of lymph extending somewhat into the heart. A very small quantity of fluid blood was found in the heart. The blow brought on an abortion, as she was between two and three months pregnant, and she eventually died of septicæmia. She was jaundiced, liver was fatty, mesentery and serous coats of the bowels were of a golden hue, and there was peritonitis. The point that I made in my paper was that, had it not been that the woman was pregnant, she would have undoubtedly recovered from the stab-wound through the heart, as nature was making every effort to heal the breach. Hence I say that stab or pistol wounds into the heart are not necessarily fatal, as the records from the history of the late war will show.

Yours truly, R. M. HALL, M.D.

METEOROLOGICAL RECORD.

For the week ending April 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S... 8	30.04	32	34	31	100	95	98	N.E.	N.	25	29	N.	1.18
M... 9	30.16	34	39	30	92	83	78	N.W.	N.	18	9	N.	0.13
T... 10	30.17	38	42	35	50	55	64	N.E.	N.E.	13	12	F.	
W... 11	29.92	34	38	33	72	95	84	N.E.	N.E.	25	44	O.	
T... 12	29.91	34	37	32	100	96	94	N.E.	N.E.	26	38	N.	1.44
F... 13	29.94	36	39	34	87	84	86	N.	N.	25	23	N.	0.30
S... 14	29.92	39	44	34	86	79	82	N.	N.E.	18	20	O.	

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 14, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,891,306	333	338	16.92	19.32	2.52	6.24	2.40
Chicago	1,438,000	—	—	—	—	—	—	—
Philadelphia	1,115,562	408	139	12.75	15.00	.50	6.50	.60
Brooklyn	978,394	347	141	20.59	20.30	.58	10.44	2.61
St. Louis	560,000	—	—	—	—	—	—	—
Boston	487,397	208	69	10.58	15.36	—	7.20	—
Baltimore	500,000	—	—	—	—	—	—	—
Washington	308,431	105	32	3.78	19.74	1.88	—	—
Cincinnati	305,000	109	30	6.36	20.24	—	2.78	—
Cleveland	290,000	97	—	14.42	12.36	3.09	3.09	3.09
Pittsburg	263,709	—	—	—	—	—	—	—
Milwaukee	250,000	88	28	4.56	14.2	2.28	2.28	—
Nashville	87,754	25	11	12.00	12.00	—	4.00	4.00
Charleston	65,165	30	12	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	96,217	30	13	6.86	20.00	—	3.33	—
Fall River	87,411	—	—	—	—	—	—	—
Lowell	87,191	30	11	6.86	33.33	3.33	—	—
Cambridge	77,100	21	12	19.04	23.80	—	—	19.04
Lynn	62,656	14	4	14.28	14.28	—	—	7.14
Springfield	48,684	15	3	13.33	13.33	6.66	6.66	—
Lawrence	48,355	—	—	—	—	—	—	—
New Bedford	45,888	17	5	5.88	17.64	5.88	—	—
Holyoke	41,278	—	—	—	—	—	—	—
Salem	32,283	18	4	—	12.50	—	—	—
Brooklyn	32,140	11	5	—	9.09	—	—	—
Haverhill	31,396	13	1	7.69	30.76	—	—	—
Chelsea	30,264	12	4	16.66	8.33	8.33	—	—
Malden	29,394	10	5	10.00	20.00	—	—	10.00
Newton	27,556	10	1	—	20.00	—	—	—
Fitchburg	27,146	6	2	—	—	—	—	—
Taunton	26,972	18	7	5.55	11.11	5.55	—	—
Gloucester	26,688	5	1	—	—	—	—	—
Waltham	22,056	5	3	—	40.00	—	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	5	0	40.00	20.00	—	—	20.00
Everett	16,585	5	3	60.00	40.00	20.00	20.00	—
Northampton	16,331	5	3	20.00	20.00	—	—	—
Newburyport	14,073	6	1	—	—	—	—	—
Amesbury	10,920	1	0	—	—	—	—	—

Deaths reported 2,536; under five years of age 888; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 340, acute lung diseases 453, consumption 296, diphtheria and croup 142, scarlet fever 42, diarrhoeal diseases 38, measles 37, whooping-cough 30, typhoid fever 17, small-pox 16, cerebro-spinal meningitis 14, erysipelas 4.

From small-pox New York 7, Brooklyn 6, Boston 3. From measles New York 16, Brooklyn 10, Philadelphia and Cleveland 5 each, Northampton 1. From whooping-cough New York 10, Philadelphia and Brooklyn 6 each, Boston 3, Cincinnati, Nashville, Lowell, Everett and Hyde Park 1 each. From typhoid fever New York and Philadelphia 5 each, Cincinnati 3, Brooklyn, Washington, Lynn and Haverhill 1 each. From cerebro-spinal meningitis New York 9, Boston, Washington, Worcester, Somerville and Pittsfield 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,488,442, for the week ending April 7th, the death-rate was 19.6. Deaths reported 3,923: acute diseases of the respiratory organs (London) 314, measles 210, whooping-cough 148, diphtheria 80, scarlet fever 39, diarrhoea 29, fever 28, small-pox (Birmingham 4, London and West Ham 2 each, Bradford 1) 9.

The death-rates ranged from 12.7 in Brighton to 27.4 in Salford; Birmingham 23.0, Bradford 15.1, Bristol 18.9, Croydon 16.3, Hull 17.9, Leeds 20.5, Leicester 14.9, Liverpool 25.3, London 19.0, Manchester 21.6, Newcastle-on-Tyne 22.2, Nottingham 18.4, Portsmouth 16.5, Sheffield 18.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 14, 1894, TO APRIL 20, 1894.

FIRST-LIEUT. ALLEN M. SMITH, assistant surgeon, will be relieved from duty at Fort Custer, Montana, at the expiration of his present leave of absence and will report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post.

FIRST-LIEUT. JAMES M. KENNEDY, assistant surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to Fort Custer, Montana, for duty.

By direction of the President, CAPTAIN ALONZO R. CHAPIN,

assistant surgeon, will report in person to the president of the Army retiring board at Fort Bliss, Texas, for examination by the board.

The leave of absence granted CAPTAIN OGDEN RAFFERTY, assistant surgeon, is extended eighteen days.

FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, is relieved from temporary duty at Angel Island, Cal., and will rejoin his proper station, the Presidio of San Francisco, Cal.

Par. 2, S. O. No. 68, A. G. O., is so amended as to direct FIRST-LIEUT. HARLAN E. MC VAY, assistant surgeon, on being relieved from duty at San Carlos, Arizona Territory, by FIRST-LIEUT. STRAUB, assistant surgeon, to report for duty at Angel Island, Cal., instead of Fort Huachuca, Arizona Territory.

So much of Par. 13, S. O. No. 79, A. G. O. as relates to MAJOR PETER J. A. CLEARY, surgeon, is so amended as to direct him on being relieved from duty at Fort McPherson, Georgia, to report for duty at Fort Wingate, New Mexico, instead of Fort Custer, Montana, for duty at that post, to relieve MAJOR WASHINGTON MATTHEWS, surgeon.

MAJOR MATTHEWS, on being so relieved, will repair to Washington City and report in person to the surgeon-general for temporary duty in his office.

PROMOTION.

CAPTAIN JAMES C. MERRILL, assistant surgeon, to be surgeon with the rank of Major, March 13, 1894, vice BARTHOLOMEW retired from active service.

SOCIETY NOTICES.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical section of the Suffolk District Medical Society will hold its regular monthly meeting on Wednesday evening, May 2d, at 19 Boylston Place, at 8 o'clock.

Dr. M. H. Richardson will make a report of "Cases of Intestinal Resection with Subsequent Suture of the Bowel."

CHARLES L. SCUDDER, M.D., *Secretary*.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 28, 1894, at 8 P. M.

Papers. Dr. F. S. Watson, "Some of the Clinical Features and the Surgical Treatment of Primary Tuberculosis of the Urinary Organs." Discussion by Dr. P. Thorndike and others. Dr. F. H. Williams, "Diphtheria." Dr. W. A. Morrison, "The Value of the Stomach-Tube in Feeding after Intubation" — based upon twenty-eight cases. Discussion by Dr. F. B. Harrington, Dr. Gannett, Dr. C. M. Whitney and Dr. Prescott.

Business. Report of the treasurer and the librarian. Election of officers. Appointment of delegates to the American Medical Association.

Supper after the meeting.

A. L. MASON, M.D., *President*.

JAMES J. MINOT, M.D., *Secretary*.

AMERICAN PEDIATRIC SOCIETY. — The American Pediatric Society will hold its sixth annual meeting at Washington, D. C., May 29, 30, 31 and June 1, 1894. The sessions will be held at the Arlington.

AMERICAN DERMATOLOGICAL ASSOCIATION. — The eighteenth annual meeting of the American Dermatological Association will be held at the Arlington Hotel, Washington, D. C., May 29, 30, 31 and June 1, 1894.

The general session of the Congress will be held at 3.30 P. M. on May 30th, the subject for discussion being "The Distribution and Control of Leprosy in North America."

R. B. MORISON, M.D., *President*, Baltimore.

C. W. ALLEN, M.D., *Secretary*, New York.

ASSOCIATION OF AMERICAN ANATOMISTS. — The sixth annual meeting of the Association of American Anatomists will be held in connection with the Congress of American Physicians and Surgeons, May 29 to June 1, 1894, in the city of Washington, D. C. This will be the first meeting since that of December 27 to 29, 1892, at Princeton, N. J. The sessions will be held in the Preparatory Department of the Columbian University.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Wednesday evening, May 2d, at 8 o'clock, by Assistant Professor T. M. Rotch. Subject, "Infant Feeding." Physicians are cordially invited.

RESIGNATION.

DR. JOHN LOVETT MORSE, has resigned the position of Registrar at the Carney Hospital.

THE MIDDLETON GOLDSMITH LECTURE.

The Middleton Goldsmith Lecture of the New York Pathological Society for 1894, will be delivered at the New York Academy of Medicine on Saturday, April 28th, at 8.30 P. M., by Prof. William H. Welch, of Johns Hopkins University. Subject: "Mixed and Secondary Infections."

RECENT DEATHS.

WILLIAM V. KEATING, M.D., died in Philadelphia, April 19th, aged seventy years.

DAVID CRABY, SR., M.D., died in Hartford, Conn., April 16th, aged eighty-eight years. He graduated from the Medical College at Castleton, Vt., in 1834, and had practised in Hartford since 1838. He was present at the first administration of ether by Dr. Wells and had attended over three thousand cases of childbirth. He was a member of the Connecticut Medical Society.

DR. FRITSCHI, Privat-docent in the University of Freiburg, and the oldest privat-docent in Germany, died recently, aged eighty-two years.

F. W. WEBER, M.D., Ph.D., died at Nieheim, Westphalia, April 5th, aged eighty-one years. Besides his reputation as a physician in his own province he was one of the best-known poets of the present time in Germany, and for thirty-two years represented his district in the Prussian Landtag.

JEAN EDOUARD JUHET-RENOY, M.D., one of the ablest of the younger physicians of Paris, died in that city, March 19th, aged thirty-nine years. He was physician to the Hôpital Cochin and had contributed many articles to medical literature, especially in the "Dictionnaire de Médecine et de Chirurgie" and the "Dictionnaire Encyclopédique des Sciences Médicales." By a curious fatality he died of typhoid fever contracted from a patient while preparing a paper on the treatment of that disease to be read at the International Medical Congress in Rome.

HENRY SMITH, F.R.C.S., England, Emeritus Professor of Surgery at Kings College, London, died at Summerhill, Horehill, Surrey, March 25th, aged seventy years. He was, in his earlier days, assistant to Sir William Ferguson, and was consulting surgeon to Kings College Hospital and at one time President of the Medical Society of London. Following Ferguson's lead he gave great attention to advocating a more conservative treatment of bone and joint disease than the then too common amputation. His chief surgical reputation, however, was made in the department of diseases of the rectum and he will be long remembered as the introducer of the clamp and cautery treatment of hæmorrhoids. He was Lettsomian Lecturer in 1866 and chose as his subject "The Surgery of the Rectum." He was an ardent lover of natural history and a most enthusiastic fisherman, his clinical and didactic lectures on surgery being constantly interspersed with anecdotes and illustrations from his favorite sport.

BOOKS AND PAMPHLETS RECEIVED.

A Modern Wizard. By Rodrigues Ottolengui. New York: G. P. Putnam's Sons. 1894.

Report of the Jefferson Medical College and Hospital for the Year ending September 30, 1893.

Laparo-Hysterotomy: Its Indications and Technique. By N. Senn, M.D., Ph.D., LL.D. Reprint. 1893.

The Annual Report of the Health of the Imperial Navy for the Twenty-fifth Year of Meiji (1892) Tōkyō.

Remarks upon Appendicitis based upon a Personal Experience of 181 Cases. By Maurice H. Richardson, M.D., of Boston. Reprint. 1894.

Clinical Diagnosis. By Albert Abrams, M.D. (Heidelberg). Third edition, revised and enlarged. Illustrated. New York: E. B. Treat. 1894.

Some Considerations Bearing Upon Practice with Dynamic Antagonists in Cases of Drug-Poisoning. By Chas. S. Mack, M.D. Reprint. 1894.

The International Medical Annual and Practitioners' Index; A Work of Reference for Medical Practitioners. Twelfth year. New York: E. B. Treat. 1894.

The Diagnosis of Mitral Valvulitis, with a Report of Three Cases. In Memoriam, John M. Keating, M.D., LL.D. By Judson Daland, M.D., Philadelphia. Reprints. 1894.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, April 1, 1894, or at date of last report received at this office. Washington. 1894.

Sixteenth Annual Report of the State Board of Health of the State of Connecticut for the Year ending June 30, 1893, with the Registration Report for 1892 Relating to Births, Marriages, Deaths and Divorces. New Haven. 1894.

Original Articles.

THE AFTER-TREATMENT OF OPERATIONS FOR APPENDICITIS.¹

BY HERBERT L. BURRELL, M.D.,

Instructor in Clinical Surgery, Harvard Medical School; Surgeon, Boston City Hospital.

THE following details and questions have presented themselves to me in the after-treatment of operations for appendicitis:

(1) The method and material to be used in securing the stump of the appendix. While, strictly speaking, the treatment of the stump of the appendix is a part of the operation, yet I shall speak of the method and material to be used as I believe it influences the treatment. I have been in the habit of using silk, and in the majority of instances it has been satisfactory; but it is occasionally open to the objection that it becomes a foreign body in the wound and may be cast off after a time, varying from weeks to months, and has made a troublesome sinus and required (in one or two instances) curetting under ether in order to remove it. While we may use silk which is perfectly aseptic it is, of course, immediately contaminated by foul septic fluids, and hence does not become organized. Catgut of sufficient size has seemed to me to be equally efficient in holding the stump of the appendix, and only occasionally have I found it necessary to use interrupted Lembert sutures to invert the peritoneal surfaces covering the stump of the divided appendix. In fact, wherever time has been of great importance I have simply thrown a ligature around the end of the appendix close to its origin, and have cut away the remaining end. In operations where there is but little pus I see no objection to using silk, but where there is a good deal of pus until I see some reason to change my method I shall use catgut in securing the stump of an appendix.

(2) Closure of the wound. I think that all surgeons would agree that the best time to operate upon an appendix is between the attacks. At this time we have a wound free from pus, and while the appendix is difficult at times to isolate, yet having once secured and removed it a clean wound is left, which can be sewed up and the patient left with but little anxiety. In several instances where I have operated between the attacks I have been surprised to find a few drops of pus, and in one instance I found while operating between the attacks, the patient having been about for some time after the previous attack, a fecal concretion the size of a cranberry bean, which was loose in the peritoneal cavity. There was also a minute perforation of the appendix. These conditions would contaminate the wound unless the septic material were removed mechanically, and the cavity rendered relatively sterile. Where time is an object I have used sutures transfixing the abdominal walls. Where the wound could be closed at leisure I have used three lines of sutures, one in the peritoneum, one in the transversalis fascia and muscles, and the third in the skin. These have usually been of silk of small size, although I prefer silkworm-gut.

(3) The treatment of shock following operation. In addition to alcoholic stimulants, brandy, whiskey, etc., heaters and rectal enemata of brandy, atropia

(1½ gr.), strychnia (½ gr.) and digitalin (1½ gr.) have been used subcutaneously to much advantage in the critical cases.

(4) The feeding of patients. I have given patients only cracked ice, beef tea, and a little milk for the first twenty-four to forty-eight hours. Opiates are used freely, for I believe that the patient loses more from suffering pain than he gains by the free action of the intestines from saline cathartics. I am sure that in one instance by the use of saline cathartics I turned the scale against the patient's recovery.

The vomiting which follows operations of this description I have treated by morphia, one-eighth to one-quarter of a grain doses, combined with cracked ice, siphon of soda and champagne. Not infrequently I have withheld all food by mouth, and have depended entirely upon nutrient enemata for from twenty-four to forty-eight hours where vomiting has been a prominent symptom. Occasionally the white of an egg has been retained where other substances have been rejected. In one instance at the end of three days where the vomiting continued I washed out the stomach with the result that the vomiting ceased. If, however, the vomiting continues beyond the third or fourth day I have usually regarded the case as hopeless.

(5) The indications and contra-indications for the use of saline cathartics. These I have used freely, and whenever there has been any rise in temperature after the first forty-eight hours, any increase in the frequency of the pulse, or a glazing of the tongue, I have used a saturated solution of salts in teaspoonful doses, or even in half-drachm doses, combined with soda water from a siphon, the drink to be given very cold. When there is any tendency to vomiting I have used half-drachm doses of the saturated solution of salts combined with a siphon of soda water, the drink to be given very cold, every hour. Occasionally where there has been vomiting I have used a saturated solution of salts by enema with excellent results, and at times a glycerine suppository enema combined with the saline enema has been efficient in establishing intestinal drainage, and I am convinced that while saline cathartics are of great value in producing intestinal drainage in septic peritonitis, yet the withholding of morphia in order to attain the full action of the salts is at times unwise. I can see no reason why opiates and saline cathartics should not be given at the same time. Of course, we must recognize that they counteract one another, but I have found that in using them in conjunction with one another I have obtained the benefits of each.

(6) The kind, amount and frequency of irrigating fluids to be used. I feel safer in mechanically flushing out with sterile water or boracic-acid solution a cavity of an appendicitis operation than I do in using solutions of corrosive sublimate. In one instance where there was a small amount of pus and a septic condition of the surrounding tissues the wound was cleansed thoroughly with hydrogen di-oxide (50 volumes), and then the septic purulent surfaces were touched with the actual cautery and the wound sewed up; but it had to be reopened on the fifth day in order to evacuate pus. This case, however, recovered very rapidly after the wound was dilated and irrigated, and at the end of six weeks the wound was completely healed and the patient up and about. It has seemed to me that it was better to depend upon flushing with sterile water than to rely upon the germicidal action

¹ Read before the Boston Society for Medical Improvement, February 12, 1895.

of antiseptics in the removal of septic material from an appendiceal wound.

The question of how frequently to irrigate a wound depends upon what kind of material is used to drain it. When there is a temperature above 101° after the third day I have usually irrigated frequently and freely, sometimes every four or six hours during the twenty-four.

(7) The next three questions may be discussed together. They are, when to drain and not to drain; what material to use as a drain, whether tubes, gauze or rubber dam; and how long to drain.

If there is no pus in the abdomen, of course the wound is closed. I have found that when there is a slight amount of pus in the wound, where the cavity can be completely cleansed, one can safely close it. However, it is safer to err on the side of drainage than non-drainage.

Whether to use iodoform gauze, rubber-dam or rubber tubing has been to me an important question. Rubber tubes, I believe, are indicated where there is a large pus cavity with walls which do not collapse; rubber-dam or iodoform gauze are indicated where the cavity is collapsible; where the intestines fall into the abscess cavity the gauze can be insinuated into nooks and corners and crevices which a tube can never reach. I am sure that it is wiser to use gauze than to use tubing in those cases of early operation for appendicitis where the appendiceal inflammation is not walled off. Where in doubt, and yet where I have closed the wound, I have placed between the edges of the wound a narrow strip of iodoform gauze or rubber-dam, which I have removed on the third or fourth day if it were not found necessary before. The cases which I always feel demand iodoform gauze are those where in operating within forty-eight hours from the beginning of the attack a perforated appendix is found, especially when it is a question whether the general peritoneal cavity is invaded.

In these cases I have left iodoform wicks in for weeks at a time, gradually withdrawing them until every vestige of septic material was removed from the wound by washing with boracic acid or sterile water.

How long to drain is a question that has never been settled in my mind. When the temperature reaches to normal, and when there ceases to be an evening rise in temperature, I usually remove a few of the iodoform wicks or the tube. The wound is, of course, irrigated out daily, and if there is much discharge iodoform is dusted over the open wound. It has been my practice where I removed an appendix, — and I never feel satisfied that I have given the patient the best chance unless I have removed the appendix, — to carry the iodoform gauze down to the stump of the appendix, believing that if this could be covered by granulation tissue a firmer cicatrix would be gained, and less liability to hernia would exist.

As a rule, I have been inclined to remove the drainage too early, judging alone from the wound, and in my later cases have come to depend upon, not alone the condition of the wound, but the patient's temperature, pulse, and the condition of the general peritoneal cavity, whether showing evidence of inflammation or not.

(8) The indications for reopening a closed wound or for exploring an open wound following an appendix operation. To reopen a closed wound offends one's surgical sense, but to allow a patient to die from septic

absorption from defective drainage is, to put it mildly, very unfortunate. On the other hand, to explore an open wound following an appendicitis operation is a thing that I have been led to do in a number of instances. I always think of doing it whenever there is a continued rise in temperature after the fifth day or a chill, where a wound tends to gape, or from which pus flows, a drachm at a time, at indefinite intervals; and whenever there is associated with it evidences of infection of the general peritoneal cavity I believe that the patient should be etherized, the wound carefully explored with the finger, and any pocket of pus or septic material that is loose should be washed out thoroughly. I am sure that this is an important thing to do, and a moment's thought must make it clear that a cavity filled with coils of intestines is very difficult, and at times almost impossible, to free from septic material at the time of operation.

In three instances last summer, between the tenth and twelfth days, after the temperature had been normal, I was obliged to reopen wounds on account of a sudden and continued rise in temperature and chills. An abscess was suspected, but in none of these cases was an abscess found. On opening up the wound, however, and separating the coils of intestines, there escaped a large quantity of offensive gas. It was so marked that in one case a bystander said, "Why, there must be a perforation of the intestines." I suspect that this gas had something to do with the continued high temperature, for in each instance the wounds were repacked, the temperature fell to normal in a short time, and convalescence was established.

In one case I explored a wound on the tenth day, and found an abscess pointing toward the loin. A counter-opening was made in the back, a drainage-tube inserted and through-and-through irrigation established. Where the appendix rests high up in the loin, and where there is a large amount of pus, I am inclined to believe that this through-and-through drainage would at times be of great value.

In two instances I have had fæcal fistulæ develop, but by thoroughly cleansing (by irrigation) the wound it has been possible to bring about a complete, although delayed closure of the wound.

I have presented these questions in the after-treatment of this operation as they have occurred to my mind. There is, of course, room for difference of opinion, and it is impossible at present to lay down principles in the after-treatment of this operation; but I am sure of one principle, and that is, that when we are in doubt the wound and abdomen should be freed from all septic material.

THE PRODUCTION OF VACCINE VIRUS.¹

BY D. D. GILBERT, M.D., CHAIRMAN, DORCHESTER, MASS.

YOUR committee have visited the two principal depots from which the vaccine stock is supplied to this section, namely, the New England Vaccine Company's operating-rooms in Chelsea, and the operating-rooms of the late Henry A. Martin, M.D. We were welcomed with gentlemanly courtesy and attention at both places, where the processes were freely shown and explained. We have also had freely given from Codman & Shurtleff a description of the process pursued by

¹ The report of a committee appointed by the Norfolk District Medical Society to investigate the production of vaccine virus.

them at their farm in Stoughton, which we were cordially invited to visit. Also, I will state that, at the meeting of the Norfolk District Society where this report was originally made, Dr. Francis C. Martin made some remarks in regard to the course pursued by him at his establishment.

At Chelsea we found buildings well adapted for the purpose—a stable so built with cemented floors, gutters and walls, that it could be thoroughly flushed; and it had evidently so been, for not a particle of stable *débris* was present. Leading from this stable, separated by an entry and double-doors, is the operating-room proper. This room has a floor of artificial stone, tiled walls, and is heated by steam. It is furnished with sets of stanchions in which to securely and comfortably confine the cattle undergoing the operations, and with a closet of fine-wire gauze, for the drying of the freshly charged points, admitting the air but excluding the coarser particles of dust. This room can also be thoroughly flushed, and it is claimed that it is so treated with antiseptic solutions from time to time. There is an evident intent to preserve the appearance, at least, of asepsis, but one notices a carelessness of the employés in handling the charged points, etc., with hands which are certainly not surgically aseptic. Whether this comes from ignorance of what science has a right to demand in such a process, or whether it is the carelessness which familiarity with routine work almost necessarily begets, I do not know. In regard to the results I will speak later.

The operating-room at the Martin establishment is an ordinary room opening directly from the carriage-house of the stable. This room has wooden floor and walls, and has no conveniences whatever for producing aseptic conditions other than such as accompany ordinary cleanliness. Mr. Reed told us they made no pretensions to do more.

The process of securing the lymph at the two establishments differs in many ways. At the New England, they use mature animals, about four years old. These are vaccinated on the back of the buttocks, in about a dozen large confluent patches, three to four inches square. At the Martin establishment they use immature animals, preferably under one year of age. These are vaccinated on the back of one buttock and on one side of the belly, in small patches about three-fourths of an inch square, which do not materially enlarge in development. At the New England establishment the animal while undergoing operation remains standing, confined by a set of stanchions. At the Martin establishment the work is done upon the animal lying on its side, and strapped to a table. At Codman & Shurtleff's, and at Dr. Francis C. Martin's, the age of animals and the process are practically the same as at the Martin stable in Brookline.

Dr. Perry, of our committee, has kindly prepared some rough diagrams which will give you a better idea of how the animals are vaccinated than will any verbal description.

Mr. Reed, of the Martin establishment, claimed that the advantages of using young animals are the lesser danger of their being diseased, and the greater facility of handling them. At the New England institute there seems to be no difficulty of handling the animals with the facilities which they have, and each animal before it is taken into their stable has been examined by a veterinary surgeon, and a certificate of its healthy condition issued to the company. This cer-

tificate is numbered, and the cow is tagged with a corresponding number which is recorded. By means of this system of numbering the company are able to know from what animal any issued points have been taken. The same system of numbering, but not of veterinary examination, is pursued at the Martin establishment. Codman & Shurtleff have all their animals examined by a regular physician, and a record of each animal is kept.

At the first glance at the animal vaccinated and ready for use, the sight is repulsive, and the broken-down, suppurating crust seems a most disagreeable thing to inoculate into the human organism. These crusts and their accompanying *débris*, you are told, are ground up with glycerine and regularly dispensed as vaccine stock in some foreign countries. Here the crust and all loose tissue are removed, thus exposing the base of the vesicle. At the New England institute, this, with the surrounding skin, is thoroughly washed with a sponge and clean water, and after a few minutes the serum exudes and, the animal standing in an upright position, trickles down to the lower edge of the patch from which it is taken upon the points. The first flow is a little discolored with blood, and is kept to revaccinate new animals with. After a while the flow of serum is obtained perfectly clear and of a slightly yellowish shade. By this method, at the New England institute, the points are not brought at all in contact with the raw surface but receive the lymph as it trickles down to the sound skin. The points are then laid upon a nickel-plated metal tray, channelled and adapted for the purpose. When the tray is filled, it is placed inside the gauze closet to dry.

At the Martin establishment, as I have said, the vesicles are individually smaller, and, after having been freed from the crust, are not washed but are wiped with a towel which seems to have done some service in the same direction before. From these vesicles, there being less tension of the tissues than where the patches are larger, the lymph does not exude itself but is squeezed out by compression of the base with forceps, and the points are charged directly from the denuded surface; therefore all are more or less discolored with blood. At the New England establishment the points having been received from the factory are sterilized before being charged—subjected for an hour to a temperature of 212°. At the other place, as I have said, no attempt at asepsis is made.

At Codman & Shurtleff's establishment the process is similar to that at the Martin, except that, instead of dipping the points into the lymph exuding from the raw base of the vesicle, the lymph is collected in little glass cups, and any *débris* present in it is allowed to settle or is skimmed off, after which the points are charged with the clear lymph.

Now, while neither of these processes approach what we know as surgical asepsis, yet the fact remains that we never hear of septic inflammation setting in within a few hours after vaccination, which it surely would do if septic matter were directly introduced into the system; so that we must believe that the charged points are not septic even if the process of preparing them is not ideal.

On the other hand, when suppuration does occur, it sets in as a secondary result to the mature vesicle. This it is claimed, and justly it would seem, is due to atmospheric germs having found their way within the ruptured capsule of a broken vesicle. Therefore, when

this occurs in this secondary manner, it is after the vaccinia has been produced, and it does not, as is sometimes claimed, interfere with the protective power of the vaccination. The resulting sore should therefore be treated antiseptically from that time on, and healed as soon as possible.

Dr. Cutler, at the head of the New England establishment, maintains that a small vesicle should always be obtained, and that, from the commencement, it should be kept as dry as possible, no moist or oily dressing ever being used. A small vesicle produces less inflammation — and so less necrosis of subjacent tissue, less areola, and so less constitutional disturbance. Moreover, it is far less liable to crack and rupture. He claims that the size and accompanying characteristics of the vesicle may be absolutely determined by the size of the original scarification, which had better be a mere puncture, and never should exceed one-sixteenth of an inch in diameter. There should be two or three of these vesicles situated nearly two inches apart, so that they may never become confluent with one another. He exclaimed, "It was a bad day when we were taught to scarify instead of the old-style puncture." His explanation of this and of his theory that a large scarification makes a confluent and highly inflamed vesicle is, that, while it is necessary to spread the inert virus obtained from calves over a large scarification, to get any result — uncertain at best — the lymph obtained from mature animals is richer in germs which become implanted all over the scarification and start numerous colonies, each a nucleus of vesicles which, as they grow, coalesce until they form the large confluent vesicle.

When a large confluent vesicle is produced in the human subject, the resulting cicatrix often fails to present the minute pits which the older vaccinators considered characteristic of successful vaccination, but this is really of no importance. In the human subject vaccinia produces a deeper inflammation than in the cow, and this fact, taken in connection with the high degree of inflammation produced by a large confluent vesicle, accounts for the necrosis of tissue which destroys the natural base of the vesicle with its characteristic pits. The simple appearance of a cicatrix affords no evidence as to the amount of protection. A cicatrix is only presumptive evidence of previous vaccination, and, if it is more than five years old, vaccination should be done in the presence of an epidemic. The only real evidence of protection is the insusceptibility to vaccinia under the most favorable conditions. Insusceptibility to vaccinia under such conditions is insusceptibility to variola. In the early history of vaccination some bold experiments were made at the small-pox hospital established by the Boston Board of Health at Noddle's Island, Massachusetts, by the way, was the first colony to introduce small-pox inoculation, and the first State to introduce kine-pox vaccination. "On August 16, 1802, 19 boys were vaccinated, and all passed through the regular stages of the cow-pox; and on November 9th following, 12 of them, together with the son of Dr. Bartlett, who had previously had the cow-pox, were inoculated for the small-pox with matter taken from a patient in the most infectious stage of the disease; and no trouble whatever followed." These facts are given in a report signed by eleven physicians, including Benj. Waterhouse and James Lloyd. A full and official account of the affair is found in the *Columbian Centinel*, December 18, 1802.

The formation of the areola is claimed to be the only test of constitutional or protective vaccination. If a person has been infected with small-pox, vaccination will not modify the disease unless the areola forms before the small-pox symptoms show. If, however, the stage of areola is reached before the symptoms of the graver disease appear, that disease will be aborted or modified by the vaccination.

Distinct, probably, from the various post-vaccinal eruptions which are sometimes called into activity by the excitement of vaccination, is a more or less widely distributed exanthem, or roseola, which is claimed to be simply a distributed areola, and need give rise to no anxiety, since it runs the same course as, and disappears with, the areola.

In conclusion, your committee are inclined to believe, from the limited observation which they have been able to make, that the New England virus is the more active and therefore the more dangerous virus to use; that the Martin virus is not as active and consequently may be the safer for general use. In reference to this, the New England people state that the danger of excessive result should not be laid at the door of active virus, which is necessary to fight an epidemic with, but is due to the ignorance of the proper technique of vaccination among some members of the medical profession, and especially among laymen who often do not hesitate to perform the operation. On the other hand, the late Dr. H. A. Martin has maintained that the serum from the large confluent vesicle on the cow, with its higher degree of inflammation, is alone responsible for the greater degree of irritation in the human subject. Your committee believe that these points can only be settled by a more careful attention, on the part of physicians, to the technique of the operation, and an observation of subsequent results.

Further, your committee are led to the positive belief that the whole subject of preparation of vaccine stock should not be left in the hands of rival commercial companies, but should be wholly under the official control of either city or State.

WHAT MIGHT BE DONE BY THE OBSTETRICAL SOCIETY TO ADVANCE THE TRAINING OF NURSES.¹

BY A. WORCESTER, M.D., WALTHAM.

IN the successful management of obstetric cases much depends upon the nursing service. Indeed, in normal cases, more depends upon the nurse than upon the physician. And in abnormal cases, especially where surgical interference is exercised, after the operation or the delivery is over, then even more responsibility falls upon the nurse for the happy uninterrupted recovery of the patient. If, to this is added the responsibility of starting a baby on a prosperous career of health and happiness, it would seem as if the monthly nurse always ought to be at least an angel. Sometimes she is one: sometimes she — isn't.

If obstetricians have poor or only tolerable nurses, it is their own fault: if they submit their patients to positively bad nursing service, then their fault is inexcusable. In other words, the physician is not blameless if his patient suffers from faulty nursing.

This particular responsibility of the doctor is of comparatively recent origin, and is due to the fact that

¹ Read before the Obstetrical Society of Boston, March 10, 1894.

within the last few years the profession of nursing has been revolutionized.

Monthly nurses used to be expected to know everything about mothers and babies. They did just as they pleased. They followed the suggestions of the physicians, if they saw fit to do so. Among these old-time nurses were many whose long experience, whose sterling common-sense and unflinching devotion entitled them to far greater rewards than they ever received. Some few of these old nurses or of their legitimate descendants may still be found in the old-fashioned households. But their type is fast passing from the stage.

In their place have come young women who have studied nursing. How contemptuously would the real old-timer have spoken of a *student* nurse! And how densely ignorant she would have seemed to the modern training-school graduate! Neither could understand the other. The revolution in nursing is complete.

With the old nurse the doctor's responsibility for the nursing service was very faint. She would brook but little criticism. Her unflinching defence lay in her silence. She would report only what she chose to report, and whatever happened she would never acknowledge her ignorance. Indeed, had she done so, her usefulness would have been abridged, for her families took comfort in her supposed infallibility. And much of the uncouth traditional household physiology and pathology of to-day has its origin in the speculations of the old monthly nurse.

With the modern nurse, on the other hand, the doctor's responsibility as to the nursing service is like that of the captain for the safety of his ship. Both are alike responsible for the execution of their orders. The modern nurse recognizes her position to be that of an executive officer: and when she is working under a physician who so recognizes her position, then all goes well. Where the modern nurse fails to give satisfactory service, the failure is generally due either to her improper training or to the inexact and unintelligible orders under which she was working. In either case the failure is primarily the physician's. For it is his business to train his nurses, or at least to secure trained-nurses for his patients, as it is also his business to give his directions in such exact intelligible fashion as will effectually prevent any misunderstanding.

Of course, it is possible that the failure of satisfactory service is due to the nurse's personal unfitness for her work; but, even so the physician is not free from accountability, for he ought to know the characteristics of his nurses and their fitness or unfitness for his different families and patients. The physician must apportion their service, just as a general must, by taking into account his subordinates' special fitness for various positions of responsibility. The personal equation nowadays is of constantly increasing importance. This is the age of specialists, and nurses equally good in all kinds of work and under all sorts of conditions are not to be found seeking employment.

If I am right in thus stating the responsibility now resting upon the medical profession as regards the nursing of their patients, it must be admitted that this responsibility is not generally acknowledged. Many physicians still scold about their nurses. Few take any pains to improve them, or take any interest in the methods of training. In short, the revolution in nursing has not yet penetrated the apprehension of such physicians.

My object in asking the attention of this Society to this subject is to enlist the coöperation of all who are interested in advancing the new movement. It is high time that concerted efforts should be made to secure, first, more trained nurses; second, better trained nurses; and, third, a more serviceable working relationship between doctors and nurses.

In this paper I purpose to consider especially the subject of obstetric nursing. Let us then, first, inquire how the supply of monthly nurses may be increased.

It is, of course, plain that the training schools of the lying-in hospitals cannot more than begin to supply the demand even of their immediate vicinity. When the birth-rate of the community is considered in comparison with the possible number of such graduates, it is only too apparent that not one out of every ten confinement cases can be so cared for.

Where the supply is so limited high wages rule, and only the rich can afford to employ trained nurses; accordingly physicians whose practice is mainly among the wealthy do not appreciate the scarcity. But women of moderate means, and of no means, need trained nurses just as much, if not more, than do their wealthy neighbors. Moreover, the physicians who attend such women in their confinements need the assistance of trained nurses.

The problem thus becomes one of economics at the very start. Its solution is not impossible. For just as is the case with physicians, so it should be with nurses: the poor now receive their medical attention at the hands of beginners or as a direct charity, and so they must receive their needed nursing service. Families of moderate means employ medical attendants who are willing to work for moderate fees. As these physicians and surgeons acquire greater reputation they take new patients only for increased fees, and so it goes on until only the very rich or those suffering from some pathological rarity can enjoy the privileged service of the very distinguished practitioners. So it must be with nurses. In a properly adjusted system of training, student nurses would practise, under the direction of their teachers, among the poor and those of moderate means. Immediately after graduation, instead of demanding at once the highest wages, they should expect to work for moderate pay among those who cannot afford more; and only after several years of increasing experience should trained nurses expect the highest wages.

At present the nursing profession in matters of compensation is too much like the clerical, where experience and proved usefulness count for little against youth and "brilliant promise."

It is, therefore, in this solution of the economic problem that we may discover how to increase the number of trained nurses. Not by increasing the lying-in hospitals, however desirable otherwise that may be, but by utilizing the opportunities for training that now surround us in the homes of the poor and of those moderately circumstanced. Thus, too, may be secured better nurses, and also that final desideratum—a more serviceable relationship between the two professions.

Until recently it has been held that nurses could be trained only within hospital walls. Whereas the truth is that nurses so trained begin their private practice under great disadvantages when compared with others, whose training has been in part in the private practice of their instructors. And in recognition of this fact,

many of the best training schools have already arranged to send out their student nurses to private work for a part of their training.

Meanwhile, the special problem before us is to arrange for the instruction in obstetric nursing of the hundreds of student-nurses and training-school graduates in this vicinity who now have no chance to learn the art. For, so long as our large training-schools graduate nurses, whose only instruction in obstetrics has been one or two lectures on the subject, we need not expect any spontaneous improvement. The graduates of these large schools may know how to manage a typhoid-fever patient, but many of them do not know a nipple-shield from a breast-pump; they, of course, do know how to arrange a room, and instruments and dressings, and the patient for an aseptic surgical operation, but they do not know how to prepare for ordinary obstetric cases. And yet, when they seek for private work, they soon find that surgical cases are not so common as confinements. Their general training, of course, helps them greatly in obstetric work if they bravely undertake it, but they have no opportunities hereabouts for instruction in this branch unless they enter the lying-in hospital courses, which at most could not accommodate one-tenth of those who should receive instruction before receiving their diplomas.

Physicians have to study surgery and obstetrics, even if they from the first intend to practise only as specialists in other branches. And it is accepted as axiomatic that some preliminary general practice is necessary to highest development in any specialty. Even more truly is this the case in the profession of nursing. No training should be considered complete that does not include obstetrics: nor should any obstetric nurse be considered as well trained who has not also been trained in the nursing of surgical and medical cases.

And yet the custom still prevails in Boston of training nurses only in specialties. Obstetric nurses, and nurses for infants, for lunatics, for neurasthenics, are graduated annually from various institutions; but very few nurses can be found who have received all of the different diplomas, and this in spite of the possibilities that neurasthenic women may have to be delivered and may become insane. Consulting specialists may so supplant the general practitioner that his type shall become extinct; but in the profession of nursing the good, all-around nurse is what is wanted now, and will be forever.

As a remedy for the present confusion, it might be thought possible to secure some coöperation among the different training-schools, such as has been secured in other cities; but that hope need not be entertained for Boston, for so jealously guarded are their doors, that not even the graduates and superintendents of other schools are allowed opportunity to study each other's methods of training. In other cities, both in this country and abroad, such opportunities are most hospitably afforded. In Boston, it would be considered most impudent even to suggest to any one training-school the possibility of its being improved by association with any others, and any appeal for a more general distribution of its peculiar advantages is met by the courteous announcement of its weekly lectures and monthly conferences, which by the liberality of the trustees are open to outsiders.

The means of improvement must, therefore, be

sought independently of present organizations. It would be easy, for instance, for the Obstetrical Society to inaugurate, or at least to matronize, a course of post-graduate instruction in obstetric nursing which should include a stiff course of lectures, recitations and examinations, with practice under approved instructors in the dispensary districts and in the homes where only very moderate wages could be afforded. The diploma granted to those who earned it would give a rating like that of the London Obstetrical Society. Were such a course of instruction offered, hundreds would apply. There would be an immediate supply of nurses for the poor, and for those who can pay at most only a few dollars for their care during confinement. The instructors in this post-graduate school, in return for their teaching, would have an abundance of assistance, and would be saved many hours of weary nursing service which they now endure.

In the same way, other societies might inaugurate special post-graduate courses of instruction in other departments of nursing. Thus nurses might be taught how to take care of infants, a department now most sadly neglected.

But better far than separate and independent post-graduate courses would be a central post-graduate school which would have general management. Such a school could do more for the advancement of the nursing profession, and consequently, for the advancement of the practice of medicine, than any agency within the realm of things possible and practicable.

Such a school would need no endowment. From its inception it would be more than self-supporting. Out of it would grow perfect systems for the registration and the distribution of nurses. In place of feeble guilds and graduate clubs would grow a large, strong association of all the members of the nursing profession. And finally, Boston might so regain her old-time preëminence as an educational centre for nurses.

One of the many advantages that would result from such a central post-graduate school would be that of uniformity in the matter of giving diplomas to nurses. The course of instruction would have to be lengthened, which by no means should be considered a disadvantage. Graduates of the present schools might then seek work as they do now, or they might take the different courses and examinations of the post-graduate school in the surety that, having obtained the advanced diploma, their services would be in greater demand.

This in time would naturally lessen the apparent value of the diploma now given by the different schools; but if it led, as well it might lead, to a uniform examination by the central licensing board, the greatest benefit would result.

Thus, in the special department of instruction under our present consideration, there is now no uniformity in the different diploma-giving schools, and we have no means of ascertaining what instruction has been given to the nurses who are engaged for our obstetric cases. For this we have only ourselves to blame, for if we instituted even examinations for nurses in this department, the different schools would at once try to conform their instruction in this branch in order that their graduates might with least difficulty obtain the advanced diploma.

As is true in every professional school where the diploma carries with it any certificate of fitness to practise, the diploma is open to suspicion if it be

granted solely by the instructors of that particular school. Thus, for instance, the possessor of such a diploma may be better versed in the different instructors' whims than in real knowledge.

If, then, we cannot at once arrange for post-graduate instruction for nurses, let us at least arrange for the examination of nurses, and so secure some sort of uniformity in their training.

THE GASTRIC AND RESPIRATORY SYMPTOMS CAUSED BY THE DUST OF CURLED HAIR.¹

BY ARTHUR P. CHADBOURNE, M.D.,

Physician to Out-Patients, Carney Hospital; Demonstrator of Experimental Pharmacology, Harvard Medical School.

CONSIDERING the great differences in the composition of the various kinds of "dust" that are known to cause so-called "dust-disease," it is somewhat surprising that it should have been possible to group almost all the resulting symptoms under the single disease called "fibroid phthisis," or "pneumokoniosis."² The list of industries that are recognized as being dangerous to the workmen on this account is already a long one, and a single addition to the number would be of little interest. The patient who is here to-night, however, has no evident signs of a "fibroid" change in the lungs, though his symptoms undoubtedly arose from continued exposure to dust in the factory where he has worked for many years.

Before giving the history of the present case, let us consider what this dust really is, and in what ways it would be likely to act in producing disease. Though there are hardly any two of the "dust-producing trades" in which the composition of the dust is exactly the same, yet in all the dust is alike made up of minute particles, so small as to float about for some time and be easily drawn in with the air breathed by the workmen. The action of these minute particles may be purely *mechanical*, and it is largely, if not entirely, from this mechanical irritation that so-called "fibroid phthisis" is commonly believed to arise. In the second place, the great differences in the *composition* of the different kinds of dust might well be expected to influence its *local action*, if nothing more. Among the substances that make up these minute particles are some that are known to have a marked action on the human organism as a whole; in others the effects are more local, or confined to one or more groups of organs; some are accumulative, others active poisons; while still others are probably inert, at least in the form in which they occur in the dust, and finally, quite a number are used as medicines. Plant and animal products, as well as inorganic matter, are among them.

Such substances may reach the larynx and respiratory tract, either by way of the nose and naso-pharynx, or directly through the mouth; but a part of the inhaled dust must be carried into the oesophagus, and in this way may enter the stomach. The portion of the foreign matter that can be absorbed, either changed or unchanged in chemical constitution by the secretions and tissues with which it may come in contact; and its characteristic general symptoms will then follow if the amount which thus enters the system is sufficiently great.

To return to the history of the present case, in which the action of the dust is certainly not that of a purely mechanical irritant.

J. D. came to the Carney Hospital (A. P. D.) in January, 1894. His family history was excellent. He had never been "sick in bed a day in his life that he could remember"; nor had he had any "lung trouble," except a few days' cough when "he had taken cold," and when working in the dust of the factory. On Sundays and holidays never coughed at all. Habits and personal history good.

For twenty years he has steadily worked in the same factory, with the exception of a few months when he was "train-hand" on a railroad, but this was thirteen years ago. In the factory, "curled hair" is prepared for mattresses, etc. Both horses' and pigs' hair is used, but only the latter is dyed; and it is when this dyed hair is used that he is troubled with his present symptoms. The pigs' hair is "disinfected" as soon as it is received at the factory, and is then thrown into large vats, which contain a mixture of logwood (*hæmatoxylin*) and copperas (iron sulphate, with copper sulphate as an impurity, and more or less sesquichloride of iron³). When thoroughly stained, the hair is removed and dried; it is then piled up ready to be put through a machine called a "separator." The "separator" pulls apart the tangled masses of hair, while a blast of air is at the same time forced through to remove the dirt, broken pieces of hair and other dust. This dust completely fills the air, and rapidly accumulates around and on the machine. The patient "feeds," that is, keeps the "separator" supplied with hair from the heap already mentioned, and has, therefore, been obliged to breathe the dust-filled air near that machine for almost twenty years.

He describes his symptoms somewhat as follows: When actually in the dust he always has more or less cough, and raises a "little thin, frothy spit, which is rather blue-colored"; but as soon as he stops work the cough stops also. For two or three weeks before I saw him he had what he called a cold, and was then raising more or less sputum all day and more at night. When working with the dyed hair the color was blue, but in the morning white and "lumpy." The specimen brought me was muco-purulent, white, and careful examination failed to show tubercle bacilli. The chief complaint, however, was of his "stomach," which had "hurt him in the same way ever since he had been in the factory, but was getting worse lately." When undyed hair was being prepared his "stomach was much better always." There was a sharp, burning pain, beginning just below the sternum, and going straight up to his "Adam's apple" (larynx) and his "mouth tasted bitter and like brass." There was pain in the epigastrium, which increased with pressure. Appetite fair. Bowels always regular, and dejections natural color. No vomiting; nausea occasional. These symptoms begin two or three hours after he has worked with the dyed material, and sometimes last a day or two after he has stopped using the dyed material. No marked loss of flesh.

On *examination*, the patient was thin, and, though poorly developed and hollow-chested, was not emaciated. Marked cyanosis and dyspnoea were absent. The tongue was thickly covered with a yellowish-brown fur. The chest showed nothing abnormal, ex-

¹ Read before the Section of Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, February 21, 1894.

² Dust which contains lead, arsenic, etc., of course an exception.

³ Lead, zinc and arsenic were tested for in the dust, but were not present.

cept slight signs of a localized bronchitis at the right base behind.

He was given ten drops of terebene for cough p. r. n., also told to take the white of a raw egg when he felt the burning pain coming on, and about ten minutes later to take ten grains of bicarbonate of soda. Maltine given as a tonic.

On his return about a week later, he reported (considerably to my surprise) that the "stomach trouble" had entirely stopped, and for two days he had not been obliged to take the medicine. The day previous he had worked with the dyed hair, but without the usual discomfort. The sputum, which he brought me, was: (1) Specimen raised in the morning before going to work, and after having been in the *dyed dust* the day before: it contained a few small fragments of dyed hair and unidentified foreign matter. No logwood fibres. There was a very slight reaction for copper, and a well-marked test for iron. (2) Specimen raised at noon after a half-day's exposure to the *dyed dust*: The sputum was frothy, mucous and strongly tinted with blue, while in it were many dark-blue specks. Microscopically, these blue fragments were evidently plant-fibres of some kind, and around each was a kind of halo of lighter blue; they were undoubtedly bits of logwood. The broken fragments of hair were surprisingly few; almost all were dyed, but the undyed hairs were most of them quite different in form from the stained specimens, and must have been horse-hair. Chemically, the copper and iron tests were much stronger than in the first specimen. (3) Specimen after a morning's work with undyed horse-hair: The sputum was very small in amount, frothy, thin and unstained. Microscopically, it showed a few unstained fragments of hair, similar to the unstained fragments of the second specimen, but no logwood fibres. The chemical tests for iron and copper were negative. No bacilli of tuberculosis could be found in any of the specimens. The examination of the dust from under the "separator" corresponded with that of the sputum; iron and copper, dyed bits of hair and unstained fragments, evidently from a different animal, bits of logwood and foreign matter being found. As already stated, zinc, arsenic and lead were absent in the dust.

Since he first came to the hospital I have seen the patient several times, and the gastric symptoms always return soon after exposure to the dyed-hair dust; but they have thus far always yielded to the treatment first prescribed. The signs in the lung finally disappeared, and when he was seen by Dr. F. C. Shattuck, who most kindly examined him for me a few weeks ago, nothing abnormal was detected in the chest.

Two points seem to me of special interest in this case: first, the absence of any signs of an abnormal condition either in the larynx or lungs after twenty years of almost daily exposure to this dense dust; second, the evident symptoms of marked irritation of the digestive mucous membrane, without a similar condition in that of the respiratory tract, though the latter would seem likely to be the most easily reached by the irritating particles. To what extent absorption has taken place in the present instance — if such has occurred at all — it is, I think, impossible to say.

To try to determine this question, and also to, if possible, show the probable condition of the lungs from exposure to this dust, I have kept some animals for several hours each day in a close cage, into which this dust is blown continuously. Judging from similar

experiments with coal-dust, it will be from sixty to ninety days before any pathological change is likely to occur.⁴

Clinical Department.

THE OPEN INCISION IN UNCOMPLICATED CASES OF HYDROCELE.

BY PAUL CLENDENIN, M.D., FORT BRADY, SAULT ST. MARIE, MICH.,
Captain and Assistant Surgeon, U. S. A.

I READ with a great deal of interest the paper by Dr. M. F. Gavin, and the discussion thereon, in your issue of March 1st. I cannot accept the doctor's dictum, "No simple, uncomplicated case of hydrocele ought to be treated other than by injection." And I must take exception to his statement, "The open incision, with or without excision of the sac, means the administration of an anæsthetic [general, I suppose he means], detention in bed for a varying period from one week to four, while to undergo an operation has considerable effect on the minds of most of our patients."

Permit me to refer to my own experience, limited though it be, to show the simplicity of the open incision in uncomplicated cases.

CASE I. H. K., soldier, German, thirty-two years old, of fine physique and in vigorous health. This man presented himself at the hospital November 8, 1891, expressing the desire that I should look at his scrotum, and, if possible, relieve his discomfort. Inspection showed a swelling of five and a half inches in length by about three and a half inches in greatest width, situated in the right compartment of the scrotum. It was easily determined to be a simple hydrocele. The man stated that he had first noticed the swelling six or eight months previously, but had paid no attention to it until the tumor became an annoyance on account of its size. It was at no time painful. I had examined this man as a recruit in November, 1890, and I know the tumor did not then exist. Despite the fact that the hydrocele was of comparatively recent origin, and that the wall of the sac presumably was not thickened to any extent — I say *presumably* on account of its recent growth, for the tumor was so tense that it was impossible to determine positively the amount of thickening — and notwithstanding it barely exceeded the limit in size usually laid down for cases suitable for operation, I decided to perform Volkman's operation rather than trust to paracentesis and injection of some irritating fluid, which, to me, is a most unsurgical procedure.

Having done a Volkman's operation three years before, and been rewarded by seeing recovery without the appearance of a single drop of pus, I made every effort to obtain the repetition of so desirable a result.

⁴ On March 16th one of the rabbits referred to above was found dead in its cage. During about five hours (average) each day it had been in a closed cage, to which a steady current of air filled with dust from under the separator was supplied and kept in motion by a forced blast. For two days before death the animal had not seemed well, and had, therefore, not been placed in the dust cage. There had been no cough and no sneezing, except during the first week; and until March 16th the appetite was good. Up to March 12th (the twenty-sixth day) there had been a loss of one-quarter of the original body-weight. Death occurred on the thirtieth day. On post-mortem examination, twenty-four hours later, nothing abnormal was found, except that the mucous lining of the stomach was throughout thickly studded with small spots and larger patches of dark brown or black, which, microscopically, proved to be not a post-mortem change, but a *hæmorrhagic gastritis*. A pathological change in the lungs was not to be expected after so short a time of exposure to the dust; and it is as yet too soon to determine the results of a sufficiently long exposure under the same conditions.

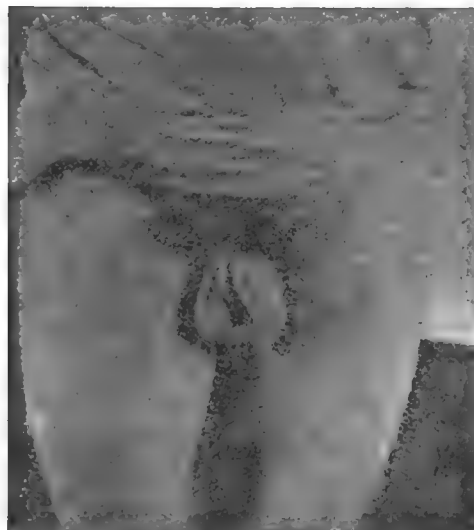
After a bath, the man's abdomen, pubes, scrotum, perineum and thighs were shaved from the umbilicus to the mid-thigh, the parts then scrubbed with soap and water, and afterwards with ether, and finally laved with a solution of bichloride of mercury (1-1000). Equal care was bestowed on the toilet of my hands. The instruments were boiled, and afterwards immersed in a solution of carbolic acid (1-20). A length of rubber tubing (also treated to a bath in the carbolic solution) was wound tightly around the base of the penis and scrotum and secured. Sixty minims of a four-per-cent. solution of cocaine hydrochlorate were injected along the line of the intended incision, resulting in complete abolition of painful sensation in about eight minutes. An incision of about two and a half inches was then made through the integument and down to the sac. Loops of silk were passed through the sac wall at the end of the incision and tied, as my former experience had taught me that the retraction of the tissues due to the subsequent irritation of the

carried to the lowest part of the cavity and secured by a safety-pin after slipping it through a hole in a piece of rubber protective-tissue long enough to cover the wound with a small margin. This was covered with a layer of hydroscopic gauze moistened with bichloride solution (1-3000), which in turn was covered with dry gauze, and over all a double layer of protective extending (with a wide margin) over the entire dressing. The dressing was secured by a firm bandage, so arranged as to apply considerable pressure and support the parts. As each layer of the dressing was applied, a hole was cut in it and the penis drawn through. The man was directed to turn on his side in urinating, and cautioned by no means to allow any urine to soil the dressings. The bandage was arranged to avoid as much as possible any soiling of the dressing by the fecal discharges, and an inspection of the dressing after each evacuation ordered made by the nurse.

The man was permitted to sit up as soon as he felt so inclined, which was on the third day, the only re-



CASE I. Cremaster contracted.



CASE I. Cremaster relaxed.

interior of the sac caused it to be difficult to secure nice coaptation of integument and serous membrane in the subsequent suturing. The sac was then incised to a trifle less extent than was the integument; the hydrocele fluid was evacuated; and the cavity of the sac swabbed with a five-per-cent. solution of carbolic acid in glycerine, as recommended by Gerster. The edges of the parietal layer of the *tunica vaginalis testis* were then united to the edges of the integument by a continuous suture of catgut, very much as a tailor makes a button-hole. In making this suture, it was found that the skin and the sac wall had both retracted more than the cellular tissue lying between them. This was so because of the cocaine injected—such, at least, is my opinion, for it was gelatinous and clear, and had the appearance of infiltration of fluid; furthermore, there was no such appearance in my former case, in which general anaesthesia was obtained by ether. This redundant tissue was removed by the scissors before suturing. The sac was washed out with a bichloride solution (1-3000), and the surrounding parts bathed in the same. A second swabbing of the interior of the sac with the carbolic solution was done, and the wound was dressed. A drainage-tube was

stricture being to refrain from walking around. The dressing was not disturbed until the bandage became loose, which occurred on the ninth day, when we were rewarded by the sight of a clean, dry wound, perfectly odorless except for the odor of the rubber protective. The scrotum was considerably swollen, and had a doughy feel. The sutures had disappeared, and the drainage-tube had been pushed out and was in the dressings. The incision was a deep sulcus in the side of the scrotum, by parting the lips of which a pink line could be seen apparently perfectly healed. The dressing had been stained by the serum, and had a brownish color, but there was no evidence of pus. There had been no pain, no rise of temperature. Mindful of the caution of Knester, as quoted by Senn in his article on "Hydrocele" in Buck's Hand-book, that failure attends this operation at times because of the too early suspension of antiseptic precautions, a dressing similar to the first one was applied after a thorough washing of the part with the 1-3000 bichloride solution, discarding the first layer of protective.

On the fourteenth day the dressings became disarranged on account of the active movements of the

man, and the wound was again inspected. The gauze was slightly stained, and at the lower part of the cut corresponding to the site of the drainage-tube were a few granulations. These were touched lightly with nitrate of silver, a little calomel dusted in the sulcus, and a dry dressing applied and held in place by a suspensory bandage. The man was fit for duty at this time, but was kept under observation until the twentieth day, and engaged in such occupations as are suitable for a convalescent. When the man returned to duty the scrotum and contents seemed normal in size. No cicatrix was visible, nothing but a deep sulcus (see photograph). The scrotal wall was adherent at one point; apparently the sac was obliterated.

CASE II. The case referred to as operated on three years previous is that of a young man of twenty, a railroad brakeman, on whom I operated at Laredo, Tex. In this case the tumor was five inches in length and of about a year's growth, situated also on the right side. I operated precisely as in the case just reported, except that ether was used for anæsthesia, and the dressing was the same, except that iodoform was used. The dressings were removed the eighth day, disclosing a dry, clean cicatrix. The young man insisted on going to his home in Corpus Christi, Tex., as soon as the second dressing was applied, and went back to work on the road the next week. Either of these men would have been at work a week after the operation had they been professional or business men.

It seems to me that open incision is the only operation for simple hydrocele of any size. The operation is not formidable with cocaine anæsthesia. My soldier watched the operation with interest, commenting on the various steps in "asides" to the nurse, and seemed quite cheerful.

I have characterized the practice of paracentesis and injection with an irritating fluid as unsurgical. I do not draw on any extended experience for this opinion, for I have treated but one case by this means. A comrade of my brakeman came to me a short time after the operation with the request that I operate in like manner on him. He exhibited a hydrocele about the size of a large hen's egg, from which I removed the fluid, having thrown a few drops of cocaine solution into the site of my puncture, and then injected the sac with twenty minims of pure carbolic acid, as recommended by Levis, at the same time promising to operate as he desired in the event of a recurrence. I have never seen the man since. I heard indirectly that he was "all right," by which I felt assured that none of the accidents which sometimes follow injection — as suppuration of the sac, gangrene of the scrotum, or even of the testicle — had occurred, but was left in ignorance of the success or failure of the purpose of the operation.

It is on general principles that I object to the injection of an irritating fluid into the hydrocele sac. It seems to me unsurgical and unscientific to set up an inflammation in a closed sac, which at once proceeds beyond your control, has no drainage, and may do serious damage to important structures. Agnew states that he has had but one failure in a number of years with the injection of tincture of iodine. Other surgeons have not had such brilliant success. According to Senn, in the article above referred to, nearly as high as fifty per cent. of failures have been reported as the result of this operation. Nineteen cases were reported by Bardeleben showing sixty-five per cent.

successful; and there are cases on record of serious results, involving even loss of life, following the injection of the tincture of iodine. The use of carbolic acid seems to promise better results, but I am not able to find any statistics concerning them.

Injection, then, does not appear to be either safe or sure; still it is spoken of by Agnew, Wyeth and others as the conservative method, to be tried in the majority of cases before attempting the more formidable procedure of Volkmann. If we had the power to set up just a sufficiency of inflammation to obliterate the sac, and not enough to do any damage to the structures involved, injection would be the ideal operation; but, unfortunately, the most of us have no such power. To be sure, the interior of the sac is irritated by swabbing with the carbolic-acid solution in the open treatment; but it is quite another matter to irritate a tissue after drainage is established.

The operation of Volkmann appears to me to be the safest and surest. With cocaine anæsthesia it is not formidable, and with attention to antiseptic precautions it ought not to be serious. The man is incapacitated for duty but a few days, not much longer than the rest recommended after injection. And with attention to the irritation of the interior of the sac by the carbolic acid, the result should be fairly sure, the failure being frequently, if not usually, due to the non-obliteration of the sac on account of the "too antiseptic" healing of the wound.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. T. BOWEN, M.D., SECRETARY.

REGULAR meeting, Monday, February 12, 1894, the President, DR. C. F. FOLSOM, in the chair.

DR. A. T. CABOT reported a case, illustrative of THE CHANGE OF A BENIGNANT TUMOR INTO A SCIRRHOUS CANCER IN THE BREAST.

The patient was a lady fifty-four years of age, who had had more or less trouble in her breast for over twenty years, this having first appeared at the time that she was nursing her first child, now twenty-six years of age. For ten years she had noticed a lump in the outer segment of the right breast which during that time had not materially altered in size.

She was seen by Dr. Cabot in February, 1893. This little mass then was about the size of a large English walnut. It was movable, and seemingly not attached, either below or to the skin. She had noticed that this lump sometimes increased and became painful at the times of her monthly sickness, but then resumed its usual condition.

Dr. Cabot saw it again in July, when it seemed possibly a little larger than at the previous examination. The skin over it showed a little irregularity of surface, the irregularity seeming to be caused by a network of fluid spaces close under the outer layer of the skin. At no time could anything be felt in the axilla.

The patient was seen again in December, she having in the meantime had some electrical treatment, in the hopes of dissipating the lump. The condition of the skin was unchanged, and it was deemed wise to

remove the mass, not because it seemed like a cancer, but in order to leave no chance of neglecting a serious thing.

The growth was removed, with considerable tissue on both sides of it, and on section, it was found to present the characteristic appearance of a scirrhus cancer. At once the rest of the breast and the skin lying over it, and all of the axillary contents, together with the loose, connective tissue lying between the breast and the axilla, were thoroughly removed.

Dr. Whitney, who made the microscopical examination of the specimen, reported the nodule to be a scirrhus cancer, and after a careful search through the glands in the axilla, could find none in which any cancerous change had commenced. The dimpling of the skin seemed to be due to the drawing of little fibres, running from the growth to the under surface of the skin at one or two points.

The case was interesting, as showing how a benignant tumor may insidiously take on a malignant character, and illustrated the importance of keeping such a tumor under observation and of removing it early, if any appearance about it suggested a suspicion of its character.

The wound healed by first intention. Care was taken to make the section of the growth with a knife which was not used further in the operation; and the hands were carefully washed after this examination was made, before proceeding with the operation, in order to obviate the danger of any of the cancerous cells being transferred to the healthy parts. It seemed like a remarkably favorable case for a cure.

Dr. W. T. COUNCILMAN showed specimens of

PERITONITIS DUE TO EMBOLISM OF THE MESENTERIC ARTERY.¹

DR. A. T. CABOT said that he had urged at a recent meeting of the Massachusetts Medical Society the importance of recognizing embolism of the mesenteric vessels as an occasional cause of obstruction of the bowels, and that the cases shown by Professor Councilman were interesting as bearing out this view. He said that he had seen cases in which a diagnosis of volvulus was made and in which he had no doubt this embolism existed.

DR. M. H. RICHARDSON: I think with Dr. Cabot that Dr. Councilman's remarks upon this possible cause of peritonitis are of great interest. That a general fatal peritonitis may be due to an interference with the intestinal circulation which is beyond surgical relief, is a fact of the greatest importance. I have considered the question of interference in such cases several times this last year. In the one of which Dr. Cabot speaks, volvulus was thought to be present. I made the autopsy, and sent the abdominal organs to the hospital. Dr. Fitz was unable to demonstrate the precise lesion. Dr. Cabot will remember two cases at the hospital of supposed general peritonitis following fractures of the thigh. There was some question of thrombosis or fat embolism at that time.² In the first case fat embolism was found at the autopsy; the second case was not examined post-mortem. Not long ago, in consultation with Dr. Shattuck, the question was considered of operating in the following case of apparent general peritonitis and obstruction following typhoid fever. It seemed very probable that there

was a portal thrombosis or an embolism — something which no operation could relieve.

Mrs. H., aged twenty-three, was convalescing in the fourth week of typhoid fever. The attack, mild throughout, was uneventful till thirty-six hours before my examination, made at 2 A. M., October 22, 1893. Eight days before she had had pain in both legs, for which a hypodermic injection of morphine had been given. At one o'clock, Friday, she was seized with severe epigastric pain relieved by half a grain of morphine. This was followed in twelve hours by vomiting, which soon became stercoraceous. Her bowels moved freely Saturday night from a glycerine enema. Her pulse Sunday morning was 132, the temperature 99°. The facies was peritoneal and the general condition bad. There was some tenderness above and to the left of the umbilicus, where distended coils of intestine could be felt distinctly. There was no general distention, though the abdomen was rather full. The patient's condition was deemed hopeless, and no operation was advised. The diagnosis by exclusion indicated portal thrombosis as the probable lesion, though the possibility of some pancreatic affection was considered. Death took place in forty-eight hours. The autopsy by Dr. Whitney was unsatisfactory on account of the interference with the pathological appearances caused by the undertaker's fluid. There was no lesion of the intestinal tube, however, nor was anything found incompatible with the diagnosis of portal thrombosis.

In this case, as in the one referred to by Dr. Cabot, and in a fatal³ appendicitis the most marked physical sign was the distended coil of small intestine. In such cases the segment of bowel is darkly congested, and heavy with blood and fluid. The sensation of tension and resistance through the abdominal wall is characteristic of a tightly distended coil, but no inference can be drawn as to its exact cause without careful consideration of the history and accompanying physical signs. The clinical features of cases of this kind are of the greatest interest to me; a satisfactory pathological explanation of them that will enable us to avoid operating in hopeless cases will be extremely valuable.

I have no doubt that we have erred in our diagnosis even at the operations for fatal cases of apparent peritonitis, not only because it is impossible at times to tell the exact pathological lesion, but because no autopsy is allowed. All who operate in acute abdominal conditions must be able to recall such cases.

I was very much interested in what Dr. Councilman said about the colon bacillus and its means of invading the tissues. I have had cultures taken in all abdominal operations in the last six or eight months. The fact that many of the alimentary micro-organisms will not grow in the ordinary media is very interesting, but it does not militate against the important clinical observation that, as a rule, if the cultures fail the patients get well; if the colon bacillus from a general exudate does grow on the culture media, the patient dies. This has been the invariable rule since I have made cultures, but the number of observations is still too small for any sweeping statements.

STRICTURE OF THE URETHRA, WITH SPECIMEN.

DR. RICHARDSON: This specimen is a firm, fibrous stricture of the urethra, dilated just in front of the

¹ See page 410 of the Journal.

² See paper by W. F. Whitney, Boston Medical and Surgical Journal, February 18, 1892.

³ Case of G. W. S., in Boston Medical and Surgical Journal, January 19, 1893.

bulb. The patient, a man of about thirty, received some years ago a blow in the perineum which resulted in a stricture that was almost impervious. The urine escaped constantly by drops. The bladder was enormously distended. Nothing could be introduced. By perineal section the fibrous mass was easily exposed. Above the constriction the urethra was much dilated; below, though healthy, it was flattened and contracted from practical disease. By transverse cuts above and below, the whole mass was removed. The ends of healthy urethra were brought together easily upon a No. 18 English sound, and fixed in satisfactory approximation by means of interrupted silk sutures. The deep union was immediate. The urethra was at once restored to its normal function. The patient has gained thirty pounds, and is in perfect health.

SPECIMEN OF APPENDIX.

DR. J. W. ELLIOT: I removed this appendix about ten days ago from a boy of thirteen. He never had an attack before. The attack began on Thursday, and his bowels were moved with oil and he was better on Friday. On Saturday more pain, and on Sunday his bowels moved again. On Tuesday I saw him and operated at once. He had a temperature of 101°, pulse of 90. The abdomen was not tympanitic, but there was a certain cakiness, on the right side, which I thought was omentum and which turned out to be omentum. The interesting thing about this specimen is that although the attack was acute, the appendix looks like a chronic appendicitis. The whole appendix is thickened and stiff. The acute part was due to the sloughing of the tip, which is opened and perforated; the omentum was wound round the appendix and saved the boy's life. There was about a teaspoonful of pus near the gangrenous tip with omentum round it. The boy made a good recovery.

DR. W. T. COUNCILMAN: I should like to say that a short while ago I made an autopsy in which there was congenital absence of the appendix. I made the dissection with the greatest ease, and no traces of an appendix could be found either on the outside or in the inside, but in the small intestine just above the valve there was a small diverticulum extending into the tissue for about one-half to one inch, which I do not think was at all analogous with the appendix. But it was interesting to find this diverticulum at the end of the small intestine with entire absence of an appendix.

DR. H. L. BURRELL read a paper on

THE AFTER-TREATMENT OF APPENDICITIS.⁴

DR. G. W. GAY: I was interested to hear Dr. Burrell describe his method of treating the stump of the appendix. In some cases, as we all know, that is the only thing we can do; the appendix is so rotten, that there is no taking sutures of any sort in the appendix itself, and in some cases, of course, nature does all that herself. The ideal way of treating an appendix, where you can, is to dissect off the outside covering, tie the appendix itself with catgut, bring the cover up over, and sew with a fine catgut suture. I most heartily agree with Dr. Burrell, when he says that he does not use silk about the appendix. I never leave silk in the peritoneal cavity if I have any suspicion of suppuration afterwards, because it often acts as a foreign body and keeps up a sinus for an indefinite length of time. It is not easy to open a wound and find a suture buried

at the bottom; it may be covered with granulations. I have in mind two cases of removal of the Fallopian tubes in which the tubes were tied off with silk, and the sinuses have never closed. Theoretically, the proper way is to close the stump of the appendix in a way to bring other tissues together than the mucous tissues. If you cannot do that, I like to use the gauze drainage. I do not like rubber tubes for drainage. The wound shrinks in twenty-four hours so that all the drainage you get is what is about the tubes, and it is not so thorough and efficient as it is to pack the wound with sterilized gauze, leaving that in three to five or six days. You probably get in that way as good drainage as it is possible to get in these cases, provided it is not a large pus cavity, when it is simply a case of putting in drainage-tubes and washing out as you would any abscess.

In regard to the use of saline cathartics or cathartics of any sort, I feel very much indebted to the gentlemen who have called me in consultation for one thing, and that is, I have learned the effects of cathartics. Almost all the cases I have been called to have had cathartics, and I have had a good chance to study their effects. In many cases they have been given where I should not dare to use them. In some cases they seem to do good, in some cases harm. In the case of acute sharp appendicitis I should not dare to give cathartics. In the case of moderate appendicitis I think it does not make so much difference if you give a saline or a dose of castor oil. I have seen a good many cases where they have received those remedies, and at the end of four or five days they have turned the corner and got well. In a severe case I think it is pretty well agreed that it is better not to give laxatives at all. After the operation the question comes, When shall we give cathartics? I do not like to give a cathartic under three or four days. I have the fear that by starting up peristalsis I may rupture the catgut ligature or perhaps produce a leak through the stump of the appendix, which perhaps drainage will not control. That is an objection which may perhaps be theoretical. As soon as I feel reasonably sure of the stump of the appendix, so that if any contents do come out they can be readily taken care of, I believe most thoroughly in salines given in small doses and frequently repeated. Vomiting is no bar to giving saline cathartics. I think I have seen vomiting stopped in peritonitis in other operations about the pelvis by giving saline cathartics; and my rule in threatening peritonitis is to give them in teaspoonful doses every hour, vomiting or no vomiting, until the bowels are evacuated.

In regard to opiates, I never have let my patients suffer very much for the want of an opiate. I think that pain has a good deal of depressing action upon the patient's strength, and I think probably the opium does more good than harm. One of the best tonics or stimulants after these operations, as after all peritoneal operations, is strychnine. I think it is better even than the alcoholics or better than anything else I know.

In regard to the time of removing the drainage, as Dr. Burrell says, it has got to be decided in every case, and you have got to go by your judgment. If there is going to be any walling off of the wound, it takes place within two or three days generally. After that you may begin to remove the gauze and, so far as I know, I have never seen any symptoms arise, which showed that the gauze was removed too soon, and the peritoneal cavity reinfected. Rubber-dam in these

⁴ See page 433 of the Journal.

cases I have not used much for drainage. I have used it in breasts, and I think it is pretty good there. I believe where there is no pus, in closing the peritoneal cavity, as Dr. Burrell says, a line of sutures for the peritoneum, another for the muscles and transversalis fascia, and another for the muscles and skin. I believe that the more attention wounds get the better. Even if you close the abdominal cavity up tight, I always like to see it at the end of three days, and I never let a wound go over five days without looking at it. If there is to be trouble, I think you will find it on the third day, as a rule; from the third to the fifth day have been the critical times in my experience. I believe in seeing the wound pretty often, and then you can take steps to correct mistakes or unfortunate occurrences. The other points that Dr. Burrell brings up are so well founded in my opinion, that I have nothing to say in relation to them.

DR. M. H. RICHARDSON: This subject should be divided for discussion into two or three distinct classes:

First, the cases in which the comparatively normal appendix is removed in the period of abeyance, when it is possible to close the abdominal cavity at once. In these cases, as far as I have observed, it makes no difference whether we use catgut or silk for tying the appendix or whether we cover the stump with peritoneum or not; whether we simply cut off the appendix and sear it with the actual cautery; whether we touch the pedicle with peroxide of hydrogen or corrosive sublimate or whether we drop it back untouched. These cases all get well as far as I have observed in this community. Not that in so safe an operation there is no danger; the accidents inherent even to the simplest procedures make a probable mortality in this of two or three per cent. The only occasion for drainage in this class is when there is a septic exudation about the appendix. Under such circumstances a slender gauze wick should be used, to be withdrawn in forty-eight hours.

Secondly, the gangrenous appendices with more or less extensive extravasations. In these cases the material used and the manner of applying the ligatures are indifferent so long as two things are accomplished—the restraining of further extravasations and the controlling of hæmorrhage. To spend valuable time in attempting to cover in the stump of the gangrenous appendix—inflamed, swollen, and friable, like those I have just exhibited—is often impossible, is always unnecessary and unwise. The only object for such a procedure is to make immediate closure and first intention possible; for extravasations are effectually restrained by the ligature, or if that gives way, they are provided for by the gauze or tube drainage.

I do not believe in the use of salines before operation, because the first symptoms in most severe cases of appendicitis are caused by fecal extravasation, often aggravated by cathartics. The opening in the appendix and into the cæcum may be as large as the opening of a bullet wound. I have seen thin fecal matter escaping from the appendix in several instances. I have not the slightest doubt, therefore, that salines have killed a good many people who, perhaps, would otherwise not have died. After operation, when the appendix has been securely tied, or when extravasation has been provided for by drainage, salines fulfil a very useful purpose in exciting abundant liquid discharges and in eliminating the toxic products of germ growth. Yet I cannot help feeling that perhaps too much reli-

ance is placed upon their use; that in a general peritonitis, with the intestines paralyzed, the abdomen distended, and the patient constantly vomiting, salines do no good whatever. They may even do harm by adding to the patient's burdens. I have never yet seen a case recover under these conditions, with any method of treatment.

With regard to intestinal drainage by enterotomy, I have seen this done once with marked success by Dr. Warren. The peritonitis had been going on for some time, and was not of the fulminating variety. Recently, in another case of general septic infection, I opened the cæcum after having drained in the median line for appendicitis with extravasation. The adjacent segments of the large intestine emptied themselves through the lumbar opening without any permanent benefit. The patient soon succumbed.

Third, abscesses in which the general peritoneal cavity is not infected generally do well, whatever method of drainage may have been used, provided it is effectual. I prefer the use of both tube and gauze, the latter in slender wicks. Gauze tightly packed often acts as a plug and prevents the escape of pus. I have used many methods of irrigation in circumscribed abscesses. None is more effectual than thorough flushing with boiled water. Recently I have tried peroxide of hydrogen in these cases, followed by that of the normal salt solution, as recommended by Dr. Morris, of New York. I have not observed any improvement in results by this method. On the other hand, I believe that there is a distinct disadvantage in the use of irrigation in local infections which have not become general—in which the adhesions are broken down, but in which there has been as yet no extensive soiling of intestinal coils. The use of warm water, under such circumstances, is hazardous, because it may spread to distant parts colonies of bacteria which by the dry-gauze method would be confined to the immediate vicinity of the drainage-tube.

In many cases of circumscribed abscess drainage has been followed by a fistula. This appears usually some days after operation, and often results from the sloughing of the stump. In these cases, with one exception, the fistula has closed spontaneously. In two instances occurring in the practice of others I have closed the fistula by resecting the intestine. In two cases malignant disease of the cæcum eventually complicated, if they did not cause, the fistula.

I have never seen any bad results from the presence of germs in a well-drained wound.

Too much gauze sometimes causes obstruction, either by direct pressure or by keeping the intestines in a faulty position until adhesions form and cause acute obstruction. Such a case I have had in the last four weeks. By opening the wound and separating the recent adhesions the patient was permanently cured. I am afraid of iodoform freely used. Except in very rare instances I use only sterile gauze.

Care must be taken not to drain a cavity too long. A permanent fistula may be formed which will close only very slowly.

I cannot believe that it is justifiable always to remove the appendix. In circumscribed peritonitis separation of the adhesions adds enormously to the dangers of general peritonitis. I cannot understand how it can be regarded in any other light. Cases of abscess with localized peritonitis get well almost invariably; as large a percentage recover as in the oper-

ation for recurrent appendicitis. I know of one or two cases in which there have been subsequent attacks; in these the first opening was probably near the tip of the appendix, another fecal stone near the base causing the second attack. Nevertheless I do not believe that in many cases there is any recurrence of the trouble, even if the appendix is not taken out.

The reopening of the wound for any cause seems a grave sequel. I dislike very much indeed, once having operated, to go in again, for the reason that the peritoneum is shut off by adhesions so recent and delicate that you cannot avoid frequently infecting with your finger the peritoneal cavity. Perhaps this danger is not so great as it seems. When I have been obliged to reopen the wound and explore extensively, no untoward results have followed.

I have closed the wound only in the recurring cases, or in those operations in which the appendix seemed but slightly affected. I use the same method which I learned from Dr. Homans, that of applying but one row of interrupted stitches. For a short time this year we united the abdominal wall by layers. There seemed no advantage in this method, and it was soon abandoned. I do not think that hernia has followed any oftener in my abdominal cases than in those of most surgeons. In my opinion a line of stitches in the peritoneum is of little importance, and adds no strength. If you are going to bring together by a separate line of sutures the strongest layer in the abdominal wall, you ought to put a row in the external oblique.

I have had practically about as good results in those cases in which I have left the patient in the hands of the general practitioner as at the hospital where they have had the care of experienced men. Certain cases will die wherever they may be or whatever the treatment. In a small percentage of patients the result will be directly affected by the knowledge and skill of the attendant. On the whole, however, the results are about the same in one place as in another, by one method of treatment as by another. A series of three cases last summer shows that some are essentially, necessarily fatal. All three cases died. The trouble was not in the way the tube was put in, or the way the case was treated afterwards, but in the nature of the case; in every one there was general peritonitis. In one the colon bacillus was found, and in all a fatal termination was unavoidable. I do not believe that these cases could have been saved by any method of treatment that is known at the present time.

I would not be understood as saying that the after-treatment makes no difference, however. In my belief and experience it does make some. The result depends more upon causes beyond our reach than it does upon any special method of treatment.

DR. CABOT said that while there was no doubt that the patients did very well when the appendix was simply tied and cut off, still he preferred the method of stripping back a cuff of the serous coat, then tying the mucous and submucous coats with catgut, and after cutting off the appendix, bringing the serous coat together over the stump with fine silk sutures.

Among the possible causes for persistent vomiting after the operation, he would include iodoform-poisoning, which he thought was sometimes overlooked.

In regard to the closure of the wound, he said that he always used a single line of sutures, including the peritoneum, both deep and superficial fascia and the skin. He had noticed that in some cases while he was

at work, if the patient coughed, the wound was drawn firmly together instead of being separated by the action of the muscles. He thought that this occurred when the incision was carried just through the edge of the rectus sheath, having the tendinous linea semilunaris just outside of it. He always tried, therefore, to make his incision at this point.

DR. ELLIOT: I would say, in regard to the material used to ligature the stump, that I have always put silk in the abdominal cavity in septic cases and every other case, and never had any sinuses or fistulas connected with the silk. I do not believe it makes the slightest difference what material you put in. I think probably the old sinuses from salpingitis and tubes are due to part of the tube being left or part of the thickened tissue left. If the silk ligatures are sterilized, I do not believe they often make trouble. Having done several hundred cases of laparotomy, and having left silk in all of them, I think I should have seen trouble if silk was objectionable.

I agree with Dr. Richardson that it does not make much difference which way you treat the stump. If I had time enough, I should do as Dr. Burrell suggests.

So far as the after-treatment of the wound is concerned, I have some rather decided ideas of my own, and one is I almost never wash out an appendicitis wound. I am very much afraid of washing into the peritoneal cavity. I suck and swab it out. I think if you have a suppurating wound under the fascia, where pus is forming rapidly, you need a drainage-tube, because the fascia closes so tightly on the gauze that it leaves a very small opening indeed. If the gauze were changed often enough, it would counteract that pulling together of the fascia; but you hardly want to take the gauze out two or three times a day and put it back again.

DR. BURRELL: I differ entirely from Dr. Richardson in regard to the classes of cases. Up to last June I felt exactly the way he does in regard to this subject, that there were a certain number of cases going to die any way and a certain number of cases going to get well. I started in on my service last summer with the intention of investigating and seeing if there was not some possibility of saving those cases which are classed as fatal, simply from the fact that they have general peritonitis; and I satisfied myself, at least, that I could save a certain number of them.

I can recall at this moment four cases of distinct general peritonitis, not of the fulminating type, but where the abdomen was tympanitic, and where there were chills, yet these patients got well by care in their after-treatment.

DR. RICHARDSON: I would not for a moment be understood as maintaining that these cases of general peritonitis ought to be left to die unrelieved. Far from it. I have found at times a much more favorable condition of things than I had expected. Indeed, so completely may we be misled by the general appearance, the local conditions, and the constitutional disturbance, that all cases, unless actually dying, should be explored. Unfortunately the cases in which we are deceived are very rare. Only those should be described as general peritonitis in which by bacteriological examination the presence of micro-organisms is demonstrated in the *general exudate*, although, as Dr. Councilman remarks, some forms of bacteria doubtless fail to grow on the ordinary culture media. My experience may have been unfortunate, but in no case has recovery followed

a general bacterial infection, as shown by cultures from the general exudate. Cultures from the appendix alone are of no value whatever in deciding the question of a general infection. Practically, all appendices contain either pure colonies of the colon bacillus or a mixed culture, as shown by Mr. Darling in examination of my cases. Unless these micro-organisms have escaped into the general peritoneal cavity, there can be no general infection, and results following operations upon a supposed general peritonitis are of no value.

I have closed the stump as Dr. Burrell has suggested in every case in which the appendix was not gangrenous or infiltrated.

DR. BURRELL: I simply wish to place on record, Mr. President, that cultures were taken in all of these cases of general peritonitis, so that we know that the colon bacillus was present.

DR. J. G. MUMFORD: When the abdominal wound has been closed over an amputated appendix stump, the treatment is the simplest imaginable. I have never seen harm come from getting the patient onto a plain, regular diet by the sixth day, moving the bowels by an enema on the third day and giving a mild laxative each day subsequently. Even those cases in which a large incision has been made, and the wound filled with gauze-wicking and drainage-tubes may be conducted by common-sense rules.

The more I see of these cases the less I am inclined to feel that immediate movement of the bowels is essential. In perhaps the first fifty cases which came under my care I tried the use of cathartics — salines — as soon as possible after the operation. During the past year and more I have become much less eager to encourage peristalsis early. The patient's bowels are usually not loaded, though the rectum is often full. If there has been vomiting, the small intestine usually contains nothing but gas. The intestinal drainage is well accomplished through the artificial opening. It must be remembered, too, that this wound is an unusually painful one during the first day or two.

For these reasons I always order a large hypodermic of morphia to be given before the patient's recovery from ether, and except for washing out the rectum, direct that the bowels remain undisturbed for thirty-six or forty-eight hours. I then begin on cathartics, and of these I eschew salines. I was led to this first from finding the frequent impossibility of such treatment in children; I substituted for salts minute and frequently repeated doses of calomel. One-tenth of a grain repeated at fifteen-minute intervals will very often move the bowels before a whole grain has been thus given. Patients take this readily, the stomach is not disturbed, and nausea is apparently thus frequently checked. When the bowels have once been started they may be kept open by a mild laxative given every day.

As to the diet, to give nothing by the mouth the first sixteen hours, and then, beginning with liquids, to gradually work up to a full diet on the fifth day, is a good safe rule, if the case goes well. Stimulants should be given freely by rectum or hypodermically during the first two days. I prefer large enemata of the normal salt solution, or four ounces of black coffee combined with strychnia, given three or four times during the first twenty-four hours.

In regard to the care of the wound there is little I can add. The main point is to keep the dressings

clean and the tubes clear during the first two days especially. The outer layers of the dressing should be changed once or twice daily and the tubes very gently syringed out with boiled water. If there is much pain and distention, I usually order a large creolin pad to cover the whole belly, and change it every three hours. This often gives the patient a surprising degree of comfort.

I think we are inclined to pull out the deep gauze drains too soon and to leave in the tubes too long. The gauze wicks may usually be left in four or five days, and pulled out as they loosen. There is always some suppuration behind them. The new wicks should be very lightly placed. At the end of the week, if the case does well, we may begin to shorten the tubes. I seldom see occasion to leave them in longer than three weeks.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

REGULAR meeting, Wednesday, February 21, 1894,
DR. FREDERICK C. SHATTUCK in the chair.

THE PRODUCTION OF VACCINE VIRUS.¹

DR. D. D. GILBERT, of Dorchester, gave the report of a committee appointed by the Norfolk District Medical Society to investigate the production of vaccine virus.

After the reading of this report at the Norfolk District Society a motion was made that a committee be appointed to urge upon the legislature the establishment of a State institution for the propagation and supply of vaccine stock; that since vaccination is made compulsory by the law of the State it seems incumbent upon the State to provide for its inhabitants as pure and efficient vaccine stock as science can produce. That vote was passed, and a committee was appointed. That committee was instructed to ask the co-operation of the Suffolk District Society in bringing the matter before the legislature, and I suppose to your knowledge of that fact I am indebted for the privilege of reading this report to you to-night.

DR. S. W. ABBOTT: My interest in this subject is not merely a recent one, but dates back thirty years or more. I think it is not generally known among the profession that animals were vaccinated so long ago; but a considerable quantity of the lymph used in the army from 1861 to 1865 was obtained from cows. My preceptors, Drs. Benjamin Cutter & Son, of Woburn, took a very lively and personal interest in it at that time. The report upon that subject is to be had in the reports of the United States army of that period by Surgeon Milhau.² The method has been criticised from this fact, that some of the animals were vaccinated upon the principle of retro-vaccination, that is, by vaccinating a cow from a healthy infant. There is not the slightest objection to that method in my opinion. It is endorsed by the German government,³ and advised by them at the present day,

¹ See page 433 of the Journal.

² See Medical and Surgical History of War of the Rebellion, Part III, Medical Volume.

³ Extract from Decree of the Bundesrath of April 28, 1887.

Section 18, relative to the method to be taken for beginning a succession of animal vaccinations: "In the vaccination of animals there may be used, (a) humanized lymph taken from the vesicles of a primary vaccination, subject to the laws of the Bundesrath of June 18,

provided the infant be healthy in all respects, and it is as easy to obtain a healthy infant as a healthy cow. There is no evidence to show any real difference in the vaccine lymph thus produced, when two or three removes from the healthy infant, as compared with that which is obtained by continuous vaccination, beginning with the lymph derived from a case of cow-pox in the cow. You may vaccinate from an infant to a heifer to-day and back again indefinitely, or take a series of infants and vaccinate from one to the other, or a series of cows from one to the other; and no evidence is as yet given to show an actual difference in the character of the lymph produced in efficiency or protective power. One of the great reasons for the change was the possibility of communicating syphilis, which is a very rare occurrence. Dr. Corey, of London, submitted himself to be vaccinated from a syphilitic infant, in 1881, and went through the stages of syphilis himself.

I took up animal vaccination again during the epidemic of small-pox in 1872, and continued the practice some twelve years, but at no time using the method of extensive scarification spoken of to-night. I employed a simple incision not over one-fourth of an inch in length, and just going through the skin, making four incisions at once, with an instrument which I devised for the purpose.* For the last twelve or thirteen years I have had little to do with the practical side of the question in any way.

I have had some opportunity to study the methods that have been adopted abroad, and find that they differ in a great many points from the methods adopted here. In almost every country on the other side of the water the practice that has been advised by the committee to-night is in vogue, that is, to have the government take charge of the work. It is not usually a commercial business abroad. There are, it is true, a few private vaccinal institutes in France and some other countries, and lymph may be found for sale in some large cities, but the possibility of its being a trade or occupation or money-making business is largely removed, especially in Germany. Some twenty-four cities in Germany have their own vaccine institutions under the government of the country, the Imperial Board of Health having a general supervision. The most important is that of Berlin, and I think the next in size is in Cologne; others are in Munich, Hamburg, Frankfurt, and almost all the large German cities.

The German law upon this subject is quoted in full in "Wood's Reference Hand-book," Vol. VII. The method of preservation with ivory points is not much used abroad. It is a very convenient method. The lymph used abroad is chiefly the glycerinized pulp. It is, I think, the method advised by Dr. Warlomont, of Brussels, who might well be called the father of bovine vaccination. His own work in Brussels is so carefully conducted that every animal is slaughtered and examined to find out whether the animal is healthy before the lymph is sent out. That is not done in all places. In London, the work is under the care of the Local Government Board, and Dr. Corey, who has been connected with that work for the last ten or fifteen years is well known everywhere as an accomplished expert in such work. He has made, as many

as fifty thousand vaccinations of infants without a single failure, and does not believe in so-called insusceptibility of infants to vaccination.⁵ In England, the parents or guardians are obliged under penalty for refusal to bring the infants at the proper time to the station to be examined, to find out whether the vaccination has taken or not, and in that way they obtain the records. In Italy, the government assumes control of vaccination, but in a more limited manner as to lymph-production. So also in Austria, Sweden and in some other countries. The following provision is made in the Italian law:

ARTICLE 3. Animal lymph may be preserved by the medical officer of the province, either at an institute for the production of lymph established by the provincial authority, or at an existing private institute for the production of lymph which has received official recognition from the provincial authority. In either case the institute must be put under the supervision of the medical officer. The medical officer is also empowered to make use of the National Vaccine Establishment at the office of the Department of Public Health (in Rome). [From the Regulations issued at Rome, June 18, 1891.]

There is one other point upon which I should like to speak, in which there is a great difference in all foreign countries from the practice now in this country, and that is as to the time for collecting the lymph from the animal. The time may be perhaps most accurately stated in hours. One hundred and sixty-eight hours (7 days) is the time that has been employed most commonly in this country, that is, a cow or heifer is vaccinated upon a certain day of the week and the lymph collected upon the same day of the week following. I think there may be some instances where it is taken a day earlier, but in no place either in Germany, in Paris or in London is the time longer than six days, and often it is five days or even less. I will read a few of the places where the time is stated: Berlin often 72 hours, Hanover 96 hours, Munich at the end of the fourth or beginning of the fifth day, Dresden three and a half days, Strasburg 117 to 144 hours. In one case a period of six days is mentioned. There is a reason for the difference, and I have no doubt that the reason is of a commercial character, so far as American methods are concerned. The amount of lymph that can be collected on the seventh day is very much greater than on the fifth or sixth day; and, as a general rule, I have no doubt that the lymph collected on the seventh day is perfectly good to use, but not always. Frequently on the seventh day I have seen vesicles that not only had much lymph in them, but they had also a purulent appearance, and certainly it would not be desirable to use lymph of that character. It has been used, and no trouble may have supervened; but I can believe that that is one of the reasons why such lymph is regarded with suspicion by persons who have made a thorough scientific study of the subject unbiased by financial considerations. It seems to me it would be a wise thing on the part of this State to send some young medical man to study this whole subject for a period of six months, or more, if necessary: spending two months with Dr. Corey, two with Warlomont, and two with the best German authorities, who have made a scientific study of the whole question. I think we should gain very much by some such method as that.

1885; (b) animal lymph subject to the same conditions as humanized lymph; (c) the solid and fluid portions of the so-called natural cow-pox.

* Figures in Wood's Reference Hand-book, vol. vii, Art., Vaccination.

⁵ "I have vaccinated close upon 50,000 children, and have never seen a case of insusceptibility." Evidence before Royal Commission on Vaccination, vol. ii, p. 142, 1889.

I would go further than anything that has been said here upon one point. It has been stated that the buying and selling of vaccine lymph at low prices has a bad effect; but I believe it would be still better if it were to be given away freely to physicians. The State should furnish it, and should bear the whole expense and furnish it free; not outside of the State limits, but to persons within the State of Massachusetts, I mean to boards of health, to cities and towns, and to all public institutions in the State and to all physicians in the State, and do away utterly and entirely with the sale of vaccine lymph by middle-men, apothecaries and travelling agents, and have it issued directly from the vaccine institution to the persons who are to use it, free of charge. I would not go so far as to say it should not be sold; but I think it should be made so free that no financial hindrance should prevent the vaccination of children.

DR. BROUGHTON: I must confess that when we started to investigate this subject of vaccination I was not prepared to find so extensive a field for study. There is certainly more in it than we have been wont to believe. I am of the opinion that the profession as a whole has not paid due attention to many phases of it. The theme is so trite that even our medical schools have not always emphasized it sufficiently. My first thought, therefore, as a result of our limited study, is a feeling of criticism of the general attitude of physicians upon the whole subject. There is a vagueness of view and a certain looseness of expression among many that is unfortunate. For instance, we have some who are prominent in the profession, eminent for their ability and learning in other departments of medicine, who have been heard to say, perhaps in a casual way, that they do not believe in the necessity of re-vaccination. Doubtless such a remark may be made carelessly and without deep conviction behind it, but emanating from prominent men the remark is quoted, and perhaps exaggerated, and a certain amount of harm is done. My own feeling is that during the present epidemic of small-pox the anti-vaccination sentiment has in this community gained not a little ground.

My own interest was first aroused by individual observation. In our practice at Jamaica Plain we seemed to meet with a large number of severe arms. Upon inquiry, many of the profession were of the opinion that severe cases were unusually prevalent in the city and vicinity. We began to question why this was. I am going to speak plainly because we have not the slightest personal feeling and intend no injustice to any. As we inquired further, it seemed as if almost all the severe cases of vaccine were in those vaccinated by the city, and we found that the source of the virus was from the New England Vaccine Company. That led us to desire to look into the matter, and the Norfolk District appointed us a committee to investigate the subject. Dr. Gilbert has covered the ground, and I will only emphasize one or two points. It was admitted without the slightest hesitation by Dr. Cutler of the New England Company, that the lymph supplied by him was of a much more active character than any other virus in the market. He claimed that this was desirable. The poor were coming into the headquarters to be vaccinated, and they wanted something that would *take* every time. He criticised, however, the technique of vaccination as ordinarily done by physicians. He claimed that they frequently made too large abrasions, and the result was a very large

vesicle with a slough and a good deal of constitutional disturbance. We asked him why his vaccine lymph was more active than that from other sources, and I do not know that he could fully explain it. We queried whether it could be explained by the fact that the cows were four years of age, whereas in the other institutions the cows were younger; and, secondly, whether his method of vaccinating the cow — by the production of such large vesicles — does not produce a lymph that contains a greater variety of germs, and perhaps germs of a more active virulence. Adopting the plan suggested by Dr. Cutler, Dr. Perry vaccinated a baby with the New England virus making only a very minute abrasion and the result was a most beautiful and perfect vesicle, hardly larger than the end of a lead pencil, and it would seem as if possibly there was some basis for Dr. Cutler's statement that the severe arms are the result of improper methods of technique. I would say, in conclusion, that loose habits of vaccinating should be corrected. I have known of one or two cases where vaccinations have been made upon the inside of the thigh, a most inappropriate place. Many, we fear, make no effort to vaccinate upon a clean surface, and are not scrupulously careful as to the condition of the instrument used. The after-care of the abrasion and vesicle has also been largely neglected. The profession is more or less responsible for the incorrect and erratic views afloat in the community. Regular physicians should be more careful what they think, what they say and what they do in this whole subject. Severe "takes" and unpleasant complications can be largely prevented I believe by proper care, and thus popular prejudice will be allayed. The State makes vaccination compulsory. It would seem, therefore, that upon her should devolve the responsibility of providing a standard and uniform kind of virus.

My feeling is that a committee should present a bill to the legislature. This, if properly framed and supported, can ultimately produce some effect. If the State can control the production of virus many of the evils will be remedied.

DR. MARTIN: I am most heartily in favor of Dr. Abbott's suggestion of establishing a State vaccine institution similar to those in Europe. As far as I know I am the only member of this Society engaged in the production of vaccine virus.

In Europe this idea of using full-grown animals is not heard of. When my father brought the virus from France to this country, the system was to propagate it upon young heifers not over six months old. That system we adhered to for some time. The calves have to be fed on milk and yolks of eggs to keep them along. We found by increasing the age to eight or ten months they are old enough to eat hay and meal and they keep strong and recover quickly and well from the vaccination as a general rule.

In regard to the use of antiseptics. A good deal has been said about asepsis and antiseptics in relation to this matter. Cleanliness and neatness are as desirable in this, as any other specialty of medicine, but I do not think the fact should be lost sight of that this whole system of vaccination is an artificial production of disease and not the restraining, killing off of disease entirely, that is to say, any substance really antiseptic in its nature will destroy the effect of the vaccine virus. The use of perfect cleanliness at the time of vaccinating or taking points should be insisted on.

Absolute cleanliness while the vesicles are maturing is practically almost out of the question, that is to say, there is in any stable a certain amount of dust and *débris* of straw, etc., which make a sort of coating over the vesicle; but when the points come to be taken, that objection is practically removed because the animal is put upon the table and thoroughly washed, the part vaccinated is thoroughly washed with warm water, then the crust is removed and under that there is usually a little whitish sort of material, soft, pulpy, not offensive pus, no odor to it, — that is removed with a cloth and the vesicle thoroughly washed with a sponge to make it perfectly clean, and that I am always very particular about. If there was any dirt of any sort about the vesicle visible to the naked eye it would be shown on the point at once.

DR. ABBOTT: I should like to allude to one point. Dr. Martin is right with regard to the age of animals. I do not think any animals are used on the other side more than nine or ten months old. The average is probably about three months, and even younger than that. By the terms of the German law, calves of five weeks old and upward are preferred. The weight is more often given than the age. One point in regard to vaccine farms in this country. I have an advertisement here in which the origin of the lymph used is stated to be the "only authentic case of spontaneous cow-pox in America."

I think we have got beyond the idea of infective diseases, like cow-pox and small-pox, being spontaneous. The fact that we cannot find a definite cause for a case of disease cannot be regarded as a proof that a cause does not exist. The cases of cow-pox occurring accidentally or incidentally in this country are not one, but many. I have visited and seen twenty-five or thirty in the cow, and eight or ten in one herd. The latter were in Lexington, in 1873. It was determined to be genuine by the appearances of the eruption, and by the fact that in some of the cases the animals were vaccinated afterwards and would not take. I have seen just such cases as Jenner described among dairy-men who milk the cows, with disease upon their thumbs and fingers exactly such as are figured in the old plates. The advertising of vaccine lymph from *spontaneous* cow-pox is a practice not only unworthy of an intelligent profession, but contrary to all observations as to the natural history of infectious diseases. The cases to which I have referred occurred always during epidemics of small-pox and at no other time. A portion of them occurred in the great epidemic of 1872-73, and the others in the milder epidemic of 1880-81.

DR. A. P. CHADBOURNE presented an account of

GASTRIC AND RESPIRATORY SYMPTOMS FROM INHALATION OF THE DUST OF CURLED HAIR.⁶

DR. ABBOTT: There are in this paper some points which may explain similar symptoms that occurred in a factory at Hyde Park. I have visited this factory once or twice. There is a report of anthrax having occurred among those workers twenty years ago.⁷ Cases then occurred occasionally of genuine anthrax coming from the curled hair from Russia, that had been shorn from animals that died from that disease. They were almost the only cases of anthrax that we have had, except a very few in towns where tanning of hides is conducted. There were some unexplained symptoms

among those people, and also in a smaller epidemic eight or nine years ago. The people were sick much longer than with anthrax, with respiratory, and also with digestive symptoms. The respiratory symptoms may have been produced by just such causes as Dr. Chadbourne has noted. There was opportunity in that factory for great improvement, and it brings up a question which I wish might be made the subject of legislation, that is, compelling all people who own factories where dusty operations are carried on to a large extent, to ventilate them on the best principles.

DR. CHADBOURNE: I would say in connection with anthrax that since the cases of this disease, mentioned by Dr. Abbott, the hair is "disinfected," but how thoroughly this is done I do not know. The horse-hair used is chiefly from the West, Mexico, South America and Tartary. The pigs' hair comes from about here. This patient told me that almost all of the men working in the factory for a considerable time suffered from the same trouble that he had, the stomach being decidedly more troublesome than the lungs; and this is the point I wish to emphasize, that in this patient symptoms of a chronic interstitial fibroid change were not apparent, but that there are other symptoms that may and perhaps do occur oftener than we think of or attribute to this cause.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING March 10, 1894, the President, DR. CHARLES M. GREEN, in the chair.

DR. A. WORCESTER read a paper entitled,

WHAT MIGHT BE DONE BY THE OBSTETRICAL SOCIETY TO ADVANCE THE TRAINING OF NURSES.¹

DR. E. H. BRIGHAM said that a large field was opened for obstetric nurses, as only the very well-to-do can afford to pay the present prices. He believed that as time goes on the number of obstetric nurses will so increase that prices will have to come down.

DR. F. H. BROWN thought that the suggestion of post-graduate courses was an extremely good one. Nurses come out of many hospitals as specialists, and need lectures on other branches.

DR. EDWARD REYNOLDS thought that specialism among nurses made the best nurses. He would suggest one method of solving the problem of expense by employing the best obstetric nurses for the first two or three weeks of the lying-in period, and then having superior nursery-maids for the next four or six weeks, who had been trained at some children's institution.

DR. J. G. BLAKE suggested that nurses might be trained in the out-patient department of the Lying-in Hospital who would be willing to go out as obstetric nurses for a moderate fee.

DR. J. STEDMAN said there was a great call for nurses at ten or twelve dollars a week.

DR. CLARENCE J. BLAKE then spoke on the subject of graduate instruction for nurses, giving a sketch of the Graduate Nurses' Association.

A committee of three, consisting of Dr. Davenport (Chairman), Dr. Edward Reynolds and Dr. Washburn, were then appointed by the chair to consider the advisability of the Society examining obstetrical nurses for registration, as proposed by Dr. Worcester.

⁶ See page 139 of the Journal.

⁷ Second Report of State Board of Health, 1871.

¹ See page 436 of the Journal.

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UNEMPLOYED MEDICAL MEN.

We hardly design to take the onward march to Washington of Coxey's army of tramps as a topic on which to "point a moral or adorn a tale." Nor is it a part of our present purpose to forecast the outcome of this enterprise (whether serious or foolish) or to speculate on the causes or remedies. Alienists may regard the whole movement as a "craze"; others will look upon it as the legitimate result of certain socialistic theories of political economy which of late years have been widely enunciated. On this point we do not intend to expatiate. We shall only touch upon a certain aspect of the subject which most concerns and interests medical men.

One of the causes of the unrest and discontent which pervades society is that multitudes have been educated to regard manual labor as degrading, and to shirk hard labor generally. There is a preponderance of half-educated men in communities, unwilling to engage in or unfit for humble callings, but with enough smattering of letters to make them effective nuisances to society; from this class come too many of our political agitators, and, we are sorry to say, some of our Congressmen. In Germany the state of things is so bad as to justify Mr. Dawson's gloomy picture: "Twenty-two seats of learning are yearly turning out studied men in thousands, and the unfortunate 'studied men' are lucky if at the age of thirty-five they are earning the wages of English bank clerks. The paternal State finds money for universities and looks to the qualifications for the professions and the civil service; but that paternal State cannot provide its carefully examined would-be-lawyers and doctors and civil servants and teachers with briefs and patients and posts and pupils; and, as a consequence, the educated unemployed increase mightily in numbers year by year. Still more formidable are the 'breakages,' the horde of superficially book-learned young fellows of the middle and lower middle ranks, whom stupidly ambitious fathers have sent to universities (the State aiding) to

fail in examinations when they ought to be selling groceries or hoeing potatoes."¹

The evil complained of exists equally in this country, and it is not too much to affirm, with a writer in the journal from which we have quoted, "that college classes are too large, and that engineers, architects, chemists, lawyers, doctors and druggists, qualified and semi-qualified, exist in far too great proportion to the rest of the community."

In its application to the medical profession, this statement is justified by reference to every city and village in New England. The latest statistics, in fact, give a constituency of only about four hundred and fifty inhabitants to each physician. In some communities the ratio is even less than this. Nor is the prospect much more inviting in the West, if we may trust a correspondent of the *Medical Record*: "As a result of our rapid railroad building, new villages are being located every few days, and it is not the rarest of sights to see one or two physicians hovering like shadows around a town which for the time being exists only on paper. These 'too previous' aspirants frequently board at country houses, daily visiting the patch of waving prairie grass, the site of the prospective metropolis, and waiting sometimes for weeks before buildings are erected in which offices can be had." This same writer gives a gloomy picture of the sharp competition with quacks in Kansas and neighboring States, and other drawbacks, and of the meagre incomes which even sober, industrious, reputable physicians receive, and draws the obvious conclusion that in the far West, as everywhere, the profession is greatly overcrowded.

The thousands of graduates who this present spring season will go forth from the very numerous medical schools of this country cannot but augment the great army of the unemployed. The recent graduate, unless he has gone into medicine for the love of the science and art of healing, and wisely, perhaps, decides to stick to the hospitals for a few years, or for life, must (unless Fortune favors him above his competitors) wait long and patiently before he can obtain practice. To many, such long waiting (involving, it may be, the sacrifice of the best years of their manhood) is very irksome; and this is especially the case when the physician is poor and dependent on his practice for his support.

We have no more to say at this time than to advise all young men and women contemplating the study of medicine to weigh well the chances of success in this profession, and ask themselves whether they are prepared to wait, it may be years, for success? If money-making is the object, they would probably do better to repudiate a calling so little lucrative.

Again, unless the student is prepared to take more than the old-fashioned, two-years' winter's course, we would say emphatically, Don't enter medicine. An instructive illustration on this point is furnished by Dr. John H. Ranch in his last "Report on Medical

¹ Popular Science Monthly, May, 1894.

Education and Medical Colleges in the United States and in Canada." He says: "During the past nine years I have followed up with exceptional interest and care the careers of 789 out of 1,000 physicians who studied four years and attended at least three terms before graduating. These are, with few exceptions, the successful and prominent members of the profession in the different communities in which they reside. They are well equipped by general education, by an ample period of professional study, by didactic and clinical instruction, and by hospital practice. They are successful, as a rule, because they have fitted themselves to command success."

THE POISONOUS PROPERTIES OF ABSINTHE AND ITS CONGENERS.

THE use of absinthe and kindred bitters, the class of appetizers called by the French *apéritif*, we are glad to believe is still small in our country, and it is to be hoped the habits of the people may not suffer any change in this respect. We have undoubtedly enough bad habits of our own without importing those of other countries. At the same time, it is well to be forewarned, and we cannot admit the great stream of foreign immigration which has been pouring in upon us without the accompaniment, in a certain measure, of the manners and customs.

Absinthe, as a drink, has long had a bad name. Its evil effects upon those addicted to its constant use have often been painted in lurid colors, which have sometimes been supposed to be exaggerated. Few, however, probably know precisely what the ingredients of absinthe and its congeners are, nor what are precisely their physiological effects. Charles Mayet has lately made a clear statement in *Le Temps*, of Paris, in regard to the composition and the physiological effects of the component parts of absinthe, liqueur, bitters, and vermouth, which, in view of their great consumption in some quarters, is not without a vital interest. His article is based upon the generally accepted investigations of MM. Cadéac and Meunier.¹

The liqueur sold under the name of absinthe contains not only the essence of the plant from which it is derived, but divers other essences varying in kind and quantity.

Dr. Lunier presents a formula of three extracts of absinthe obtained by distillation, which are generally employed in commerce and known as *fine*, *half-fine* and *ordinary*. These portions are for five and a quarter gallons of absinthe.

	Ordinary	Half-fine	Fine
Leaves and flowers of the great absinthe	600	600	600
Leaves of little absinthe . . . . .	..	200	125
Balm-mint (mellise)	125	125	200
Flowers of hyssop	100	100	225
Angelica-root . . . . .	..	25	..
Green anise	400	800	1,000
Badiane . . . . .	..	400	225
Fennel . . . . .	..	250	250
Coriander . . . . .	..	225	225
Alcohol (85%)	11,750	12,000	16,300
Water	9,500	8,000	4,000
(Quantities given in grammes.)			

¹ Experimental Researches in Essences, Paris, 1892.

An infusion is made of these plants and seeds during twenty-four hours in a portion of the alcohol; it is then distilled with the water, and to the product is added the remainder of the alcohol and water. To obtain the green color indigo is often used, and is heightened with burnt sugar and saffron. A little alum is added to hold the color in suspension.

In the formula given there are three plants of the group which produce epilepsy, namely, absinthe, hyssop and fennel, and a plant of the stupefying group, the angelica.

The guinea-pigs utilized by Cadéac and Albin Meunier in studying the action of the vapor of the essence of hyssop, were victims of the incense of this poetic and biblical plant. In one instance it was administered solely by the respiratory organs. A guinea-pig placed under an observation bell glass, staggers, exhibits spasmodic convulsions, passes into extreme opisthotonos, and dies at the end of an hour and a half from having simply breathed the perfume of a few drops of the essence of hyssop. Another experiment consisted in injecting into the veins of a dog a few drops of the essence of hyssop, which resulted in a violent attack of epilepsy. Absinthe produced the same effect.

Four grammes of the essence of hyssop given upon an empty stomach suffices to kill a dog weighing sixteen pounds in thirteen hours. Six grammes will kill a dog of thirty-two pounds three hours after ingestion. One gramme will kill an animal weighing one hundred and fifty grammes. A man cannot absorb two grammes of this essence of hyssop without danger of falling in an attack of epilepsy. One gramme will cause numbness, ocular troubles and trembling. The essence of hyssop is then, like absinthe, a formidable poison.

The fennel, which Charlemagne commanded to be cultivated, and which the Russians, the Armenians and the Tartars consume as a salad as we do the onion and the water-cress, also figures in the series of plants which enter into the composition of absinthe. Cadéac and Meunier, who have experimented with the essence of this plant upon divers animals, remark that the epileptogenic properties of the essence of fennel are unquestionable. Its activity is inferior to that of hyssop and absinthe, but it is far from innocuous.

Angelica-root, which is put in the category of the excito-stupefacients, is recognized as having the property of stimulating the mental faculties and the muscular energy. Its salutary effects, however, are transient: those that are dangerous soon become preponderant. The prolonged fatigue, the somnolence, the unconscious enfeeblement of all the faculties, are finally the certain inheritance of all who misuse it.

From these investigations M. Mayet concludes that we are amply justified in placing the liqueur of absinthe, compounded of these divers essences, among the poisonous drinks that are particularly dangerous.

Passing to the bitters, the formula used the most in France is for five and a quarter gallons of bitters, namely, Dr. Decaisne's formula:

Anise 80 grammes, orange peel 80 gr., calamint 80 gr., juniper berries 80 gr., sage 80 gr., great absinthe 60 gr., angelica 40 gr., mint 40 gr., lavender flowers 40 gr., clove 20 gr., alcohol (80 per cent.) 650 gr., sugar 600 gr., water 650 gr.

In this list, the absinthe and the angelica already known make their appearance.

For an analysis of the sage, the mint, and the lavender the previous authorities are again referred to. They tell us that the sage is a poisonous and epileptogenic factor. If a guinea-pig is put into an atmosphere saturated with the vapors of this essence, the experiment is attended by all the successive symptomatic phases observed after the injection of small but strong quantities of this essential oil into the venous circulation of a dog: a lively excitation, sudden starts, shakings, muscular rigidity, drunkenness, a fall, and then epileptic convulsions. This is fresh evidence that the essences produce by their perfume absolutely the same effects as when taken into the stomach. The poisonous character of the sage, however, varies with the place of its origin. Some specimens are but slightly poisonous. Considerable doses of such do not cause in man more serious troubles than affection of the sight, the subjective sensations of heat and cold, of nausea, of dizziness and tingling, but associated in the bitters with epileptogenics and other poisons, there is much more to fear. There is strong reason to think, however, that the more poisonous essences of sage are more commonly employed in the fabrication of bitters; such were procured by Messrs. Cadéac and Meunier in a warehouse at Leipzig, which given in a dose of five centigrammes caused a violent attack of epilepsy in a dog weighing sixteen to eighteen pounds, which was soon followed by death.

A small quantity of calamint, for example, thirteen grammes to twenty-six gallons, will be found grateful to our organic functions. The ingestion of a small quantity of this essence renders our faculties alert and active, and gives to the lower animals a sprightly and intelligent air. They seem perfectly satisfied with conscious strength and mastery; they move about with pleasure, and promenade with a proud and conquering gait; but if the dose is strong, drunkenness and epilepsy follow. It will be well to remember that in the formula for distillation there are eighty grammes of calamint to five and a quarter gallons, or nearly four grammes to a quart.

The effect of mint is in dispute. Its essence is slightly poisonous. An excitant for some, it is antispasmodic and tranquilizing for others. Soothed by a feeble dose, a large one will excite. Twenty grammes introduced into the stomach of a dog will cause death by asphyxia, with convulsions.

With regard to lavender, an equally integrant part of the bitter, Cadéac and Meunier declare it to be unquestionably stupefying. It is a powerful poison: two and a half grammes of the essence of lavender injected into the veins of a dog weighing thirty-eight pounds will kill him in four or five minutes.

Having thus obtained positive information in regard to absinthe and the bitters, we are told what is con-

tained in vermouth, and arquebusade water (*eau d'arquebuse*). Vermouth (a German word signifying absinthe) is less a liqueur than a white wine, alcoholized and aromatized with divers plants. The formula for that commonly consumed in France, is as follows:

For twenty-six gallons of vermouth (100 litres): white wine 95 litres, alcohol (85 per cent.) 5 litres, great absinthe 125 grammes, gentian 80 gr., angelica-root 60 gr., thistle 125 gr., calamint 125 gr., alder 125 gr., little centaury 125 gr., germander 125 gr., 15 nutmegs and 6 fresh oranges cut in slices.

In this formula we still find the absinthe epileptogenic and toxic; the angelica, in the first instance excitant, and then somniferous and depressing; and the calamint an excito-stupefacient.

In regard to vulnerary, or arquebusade water, it is the most complete expression of a type of liqueur which is aromatic and poisonous. The formula for the essence for 100 litres (26 gallons) of alcohol (60%), is:

Essences of absinthe 7 grammes, of angelica 25 gr., of basil 1½ gr., of calamint 1½ gr., of fennel 50 gr., of hyssop 13½ gr., of marjoram 16 gr., of balm-mint 3½ gr., of mint 12 gr., of rosemary 34 gr., of rue 6 gr., of savory 27 gr., of sage 48 gr., of wild thyme 12 gr., of thyme 12 gr., of hypericum 1 gr., of lavender 97 grammes.

All these essences are noxious; all, in certain doses, with diverse manifestations, poison and kill.

"Here, in their brutality" says M. Mayet, "are the proportions of the powerful poisons established by experience for these essences, which figure in French cordials, aperitives, and in the greater part of liqueurs. In drinking this liqueur — the type of all those spoken of — the mother as well as the young girl is preparing to become the parent of candidates for epilepsy. As regards the man, after drinking there is a momentary increase of strength, a transitory excitation which will be very quickly followed by an intolerant, impulsive and disputatious disposition, and which, if exaggerated by abuse of the liqueur makes him a violent, stubborn, quarrelsome and bad citizen."

MEDICAL NOTES.

SMALL-POX IN CHICAGO. — The total number of cases of small-pox in Chicago during the month of April was five hundred and eight. There is an average of about twenty new cases daily. The public schools have been ordered closed for a week upon the recommendation of the Board of Health.

AN EPIDEMIC OF TYPHUS FEVER IN PRAGUE. — Since the middle of January a considerable epidemic of typhus fever has prevailed in Prague which is only just beginning to subside. The causes lay in the filthiness of the houses, the accumulation of excreta in the canals, the insufficient sanitation of the streets, and, particularly, the abominable character of the water-supply.

THE CHOLERA AT LISBON. — Dr. Montaldo, the chief medical director of the Spanish Government, who was sent to Lisbon to inquire into the character of the disease now raging there, which Portuguese medical officials designated as "cholérine," reports that the

disease is true Asiatic cholera. On the 25th of April there were eighty-four new cases of the disease, since when the daily number of new cases has fallen to about sixty. At present there are about four hundred patients under treatment. The Spanish Government has established additional sanitary stations along the Portuguese frontier and has ordered an inspection of the condition of Spanish towns.

AWARD OF THE WATSON MEDAL. — Dr. S. C. Chandler, of Boston, has been awarded the Watson Medal of the National Academy of Sciences at Washington for his work in astronomy. This medal has been awarded but four times in the last twelve years, the last being in 1892 to the distinguished German astronomer, Auwers.

SURGICAL INSTRUMENTS ARE DUTIABLE. — The Treasury Department has ruled, through its Board of General Appraisers, that instruments used by physicians or surgeons for the purpose of carrying on their profession are mechanical instruments, mere tools, and cannot be classed as scientific instruments on the free list, but must be assessed for customs dues.

A PRIZE OFFERED TO NEW YORK PHYSICIANS. — The Medical Society of the State of New York offers a prize of one hundred dollars for the best original essay on any medical or surgical subject. Competitors must reside in the State of New York and be members of a County Medical Society. Essays are to be sent to the Chairman prior to January 1, 1895.

THE MINNESOTA INSANITY LAW UNCONSTITUTIONAL. — The law of the State of Minnesota regarding the commitment of insane persons to asylum care, which was passed in 1893 has been declared by the court to be unconstitutional. This decision is likely to cause considerable trouble as about five hundred persons have been committed under its provisions, and the next session of the legislature does not meet until January, 1895, till when no relief can be had.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, May 2, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 34, scarlet fever 49, measles 7, typhoid fever 7, small-pox 6 (no deaths). There are now 10 cases of small-pox in the hospital.

CAMBRIDGE SCHOOL CHILDREN'S FEET. — The School Board of Cambridge, Mass., has granted Dr. G. W. Fitz of the Harvard University gymnasium permission to take measurements of the feet of school children in all the public schools of the city upon obtaining consent of the child or its parents. So far there has been practically no objection on the part of the children examined.

A BEQUEST TO THE WATERBURY HOSPITAL. — The will of the late Charles Scott, of Washington, D. C., bequeaths the sum of five thousand dollars to the Waterbury, Conn., Hospital.

ELECTION OF OFFICERS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — The following officers were chosen for the coming year at the annual meeting of the Suffolk District Medical Society, April 28th: President, A. L. Mason; Vice-President, John G. Blake; Secretary, Herbert L. Smith; Treasurer, Edward M. Buckingham; Librarian, B. J. Jeffries; Commissioner of Trials, C. W. Swan; Member of the Nominating Committee of the Massachusetts Medical Society, W. L. Richardson; Committee of Supervision, F. Minot, W. Ingalls; Committee on Social Meetings, H. Williams, G. A. Leland, E. Reynolds, P. Thorndike; Censors, F. H. Davenport, H. F. Vickery, F. B. Harrington, R. W. Lovett, E. O. Otis.

NEW YORK.

COLLEGE OF PHARMACY COMMENCEMENT. — The sixty-fifth annual commencement of the College of Pharmacy of the City of New York was held at Carnegie Music Hall on April 25th. The degree of Ph.G. was conferred on a class of 128 graduates by the President, Samuel W. Fairchild, and an address was delivered by the Rev. John W. Brown, rector of St. Thomas's Church.

A NEW HOSPITAL FOR CONSUMPTIVES. — The organization of a new hospital and dispensary for consumptives has just been perfected. At a meeting held for the purpose on April 26th at the house of the President of the Board of Managers, Mrs. Richard Irvin, Dr. A. L. Loomis made an address, in which he spoke of the inadequacy of the treatment of tuberculosis at the general hospitals, and of the desirability of institutions providing the most approved means of treatment. In speaking of the proposed undertaking, he said: "Where a change of air is necessary, the dispensary ought to be able to send them to a sanitarium near the mountains. Boston has such an institution, and it has had the best of results. The lives of many shop-girls and clerks who cannot receive proper treatment as things exist now might be saved by such an institution." A house has been secured on West 38th Street for the commencement of the work, and it will be opened early in May. It will be supplied with the pneumatic cabinet and other appliances for treatment, and Dr. Charles E. Quimby, who has been associated with Dr. Loomis for a number of years, will be the attending physician. There will be a board of lady managers and an advisory medical board, consisting of Drs. A. L. Loomis, Charles McBurney, Henry F. Walker, William M. Polk and A. A. Smith.

Miscellany.

THE TREATMENT OF SEA-SICKNESS.

DR. CHARTERIS of Glasgow reported in 1893¹ that favorable results had been obtained from the use of chlorobrom in sea-sickness. He now states,² as his conclusion from a study of three hundred cases, that if

¹ *Lancet*, February 15, 1893.

² *Ibid.*, April 21, 1894.

suitably administered it has a decided prophylactic value for both long and short voyages.

"To ensure success in this treatment, it is essential that the *prima vie* should be freely moved for two successive nights before embarkation, and that for the first two or three days of the voyage the traveller should eat 'spare and dry,' avoiding above all things soup, sweets and pastry. A full dose of chlorobrom (one tablespoonful and a half for a male and one tablespoonful for a female) must be taken for the first three nights of the voyage. After this period a further use of the solution will probably be found to be unnecessary and all restrictions of diet may be removed. Idiosyncrasis of the patient may prevent in very rough weather absolute freedom from sea-sickness, but on the evidence produced there seems to be every probability that in the majority of cases immunity may be obtained.

"In short voyages, when the steamer leaves, perhaps at 10 P. M., the passenger should immediately retire to rest, and take one of the doses mentioned. In a shorter passage across the Channel a teaspoonful should be taken before going on board. By following these directions immunity from sea-sickness is obtained in the great majority of cases, but if they be not followed it is to be remembered that chlorobrom has no effect in arresting an outburst of vomiting. If it is given in a teaspoonful dose every ten minutes until a tablespoonful and a half or a tablespoonful have been taken, it will almost invariably check retching and depression."

OBITUARY. — THEODORE METCALF.

MR. METCALF was born in Dedham, Mass., in the year 1812, and was a son of Judge Theron Metcalf, who lived to be over ninety years old. In 1826, he began an apprenticeship at Hartford, Conn., where he remained for ten years, the last three as partner.

Leaving there in 1837, he established the apothecary store at No. 39 Tremont Street, Boston, which has, with the exception of the years between 1845-1855 (most of which were spent abroad), been continually under his personal supervision. Combining with his inflexible integrity and steadfast devotion to his adopted calling, an intimate knowledge of drugs, both crude and prepared, he was influential in elevating the position of the pharmacist from the rank of a tradesman to that of a professional man.


The natural result of his persistent and consistent endeavors was the establishment of an immense business, to which he was attentive to the close of his long career. Mr. Metcalf's first associate in business was Mr. Jos. Burnett; one of more recent years was Mr. Thomas Doliber. He had the intuitive perception of character which enabled him to surround himself with the best executive ability, and some years ago associated with himself a number of his leading employees, those in charge of the different departments, and incorporated the Theodore Metcalf Company, of which he was Treasurer at the time of his death.

Mr. Metcalf has been very active also in affairs outside of his business, and of a very charitable disposition, and always ready to assist personally and financially all objects of a worthy and charitable nature; and many young men will testify as to the great assistance and encouragement given by him which enabled them to successfully prosecute their aims in life.

Mr. Metcalf was for more than thirty years the treasurer of the Channing Home, the first president of the Boston Druggists' Association, one of the founders of the American Pharmaceutical Association, one of the promoters of the Massachusetts College of Pharmacy, trustee of the City and St. Elizabeth's Hospitals, and one of the trustees and first president of the Catholic Union.

METEOROLOGICAL RECORD.

For the week ending April 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.			Direction of wind.		Velocity of wind.		Weath'r. •		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
		Daily mean.	Daily mean.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.							
S..15	30.04	44	50	39	50	57	54	N.	S.E.	17	3	F.	F.	0.03
M..16	30.11	46	51	40	57	49	53	N.E.	S.E.	10	4	C.	C.	
T..17	30.21	46	52	41	67	30	74	S.E.	S.E.	4	3	F.	F.	
W..18	30.30	51	40	46	54	49	52	S.E.	S.W.	6	12	C.	C.	
T..19	30.12	52	61	44	66	85	76	S.W.	S.W.	20	14	O.	O.	
F..20	29.99	60	69	52	82	84	85	S.W.	S.	5	9	O.	O.	
S..21	29.88	60	66	54	83	94	88	S.	S.W.	18	12	O.	O.	
	30.11		56	45			69							

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 21, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diphtheria and croup.	Scarlet fever.	Measles.	
New York	1,891,306	847	362	20.16	18.38	9.36	2.28	3.36	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	423	123	8.74	13.57	.23	4.14	.92	
Brooklyn	978,394	361	136	15.68	22.40	7.64	1.40	2.24	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	231	74	15.05	20.31	5.58	5.16	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	109	27	9.20	11.04	1.84	.92	.92	
Cincinnati	305,000	120	33	9.96	16.60	4.15	—	—	
Cleveland	290,000	77	28	13.00	23.40	5.20	1.30	1.80	
Pittsburg	263,709	—	—	—	—	—	—	—	
Milwaukee	250,000	65	31	8.24	24.64	—	—	8.06	
Nashville	87,754	29	6	—	24.15	—	—	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	37	14	5.40	18.90	—	—	—	
Fall River	87,411	—	—	—	—	—	—	—	
Lowell	87,191	29	14	10.36	24.15	—	—	—	
Cambridge	77,100	18	4	27.77	—	11.11	16.66	—	
Lynn	62,686	11	5	—	—	—	—	—	
Springfield	48,684	—	—	—	—	—	—	—	
Lawrence	48,365	12	3	—	16.66	—	—	—	
New Bedford	45,886	21	6	—	28.56	—	—	—	
Holyoke	41,276	—	—	—	—	—	—	—	
Salem	32,233	11	3	9.09	—	—	9.09	—	
Brookton	32,140	5	0	—	33.33	—	—	—	
Haverhill	31,396	26	7	3.5	30.80	—	—	—	
Chelsea	30,264	9	1	—	11.11	—	—	—	
Malden	29,594	7	1	—	—	—	—	—	
Newton	27,556	5	1	—	—	—	—	—	
Fitchburg	27,146	10	4	—	—	—	—	—	
Taunton	26,872	11	3	—	—	—	—	—	
Gloucester	26,688	8	1	25.00	—	—	—	—	
Waltham	22,058	5	1	—	40.00	—	—	—	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,802	3	0	—	33.33	—	—	—	
Everett	16,585	5	3	—	20.00	—	—	—	
Northampton	16,331	3	1	—	—	—	—	—	
Newburyport	14,073	4	0	—	25.00	—	—	—	
Amesbury	10,920	4	0	—	25.00	—	—	—	

Deaths reported 2,541: under five years of age 926; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 358, acute lung diseases 459, consumption 282, diphtheria and croup 151, scarlet fever 48, measles 46, whooping-cough 27, typhoid fever 27, diarrhoeal diseases 25, small-pox 11, erysipelas 9, cerebro-spinal meningitis 8, malarial fever 6.

From whooping-cough New York 12, Boston 5, Washington 3, Philadelphia, Brooklyn, Cincinnati, Cleveland, Milwaukee and Lowell 1 each. From typhoid fever New York and Philadelphia 7 each, Cincinnati 4, Boston, Washington and Milwaukee 2 each, Brooklyn, Cleveland and Haverhill 1 each. From diarrhoeal diseases New York 9, Brooklyn, Cincinnati, Lowell and Gloucester 2 each, Philadelphia, Boston, Washington, Cleveland, Milwaukee, Worcester, Somerville and Salem 1 each. From small-pox Brooklyn 7, New York 3, Boston 1. From erysipelas

New York 4, Philadelphia and Brooklyn 2 each, Boston 1. From cerebro-spinal meningitis New York 4, Gloucester 2, Cleveland and Worcester 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 21, 1894, TO APRIL 27, 1894.

MAJOR VALERY HAVARD, surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to David's Island, N. Y., for duty at that depot, relieving MAJOR JOSEPH R. GIBSON, surgeon.

MAJOR GIBSON, on being relieved by MAJOR HAVARD, is ordered to Fort Snelling, Minnesota, for duty at that station, relieving MAJOR CHARLES K. WINNE, surgeon.

MAJOR CHARLES K. WINNE, on being relieved by MAJOR GIBSON, is ordered to duty at Fort McHenry, Maryland, relieving CAPTAIN CHARLES B. EWING, assistant surgeon.

CAPTAIN EWING, on being relieved by MAJOR WINNE, will report for duty at Jefferson Barracks, Mo.

CAPTAIN WILLIAM L. KNEEDLER, assistant surgeon, will, in addition to his present duties as post surgeon, Fort Mason, California, perform that of attending surgeon, San Francisco, Cal., until further orders.

Leave of absence for one month, to take effect on or about April 24, 1894, is granted CAPTAIN JAMES D. GLENNAN, assistant surgeon.

CAPTAIN NATHAN S. JARVIS, assistant surgeon, will be relieved from duty at David's Island, N. Y., upon the arrival of CAPTAIN SAMUEL Q. ROBINSON, assistant surgeon, and will report in person to the commanding officer, Willett's Point, New York, for duty, relieving CAPTAIN WILLIAM P. KENDALL, assistant surgeon.

CAPTAIN KENDALL, upon being so relieved, will report in person for duty at Fort Columbus, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING APRIL 21, 1894.

MURRAY, R. D., surgeon. To inspect quarantine stations of Florida. April 17, 1894.

BAILHACHE, P. H., surgeon. To proceed to New London, Conn., as inspector. April 18, 1894.

MEAD, F. W., surgeon. To report to chairman, Committee on District of Columbia, U. S. Senate, for special duty. April 7, 1894.

CARMICHAEL, D. A., passed assistant surgeon. To report to medical officer in command at San Francisco, Cal., for temporary duty. April 11, 1894. To proceed to Fort Townsend, Washington, and inspect Marine-Hospital Service and Quarantine Service. April 21, 1894.

BROOKS, S. D., passed assistant surgeon. To proceed to Chicago, Ill., for temporary duty. April 3, 1894.

BRATTON, W. D., passed assistant surgeon. To report at Bureau. April 18, 1894. To proceed to Reedy Island Quarantine and await orders. April 20, 1894.

VAUGHAN, G. T., passed assistant surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Marine Service. March 19, 1894.

COBB, J. O., passed assistant surgeon. To proceed to Seattle and Tacoma, Wash., as inspector. April 12, 1894.

WERTENBAKER, C. P., passed assistant surgeon. Granted leave of absence for two months. April 3, 1894.

BROWN, B. W., assistant surgeon. Granted leave of absence for six days. April 7, 1894.

DECKER, C. E., assistant surgeon. Placed on "waiting orders." April 1, 1894.

STRAYER, EDGAR, assistant surgeon. To proceed to Vineyard Haven, Mass., for temporary duty. April 4, 1894.

OAKLEY, J. H., assistant surgeon. To proceed to San Francisco Quarantine Station for temporary duty. April 11, 1894.

PROCHAZKA, Emil, assistant surgeon. To proceed to Cleveland, Ohio, for temporary duty. April 2, 1894.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—The next meeting will be held at 19 Boylston Place on Monday, May 7th, at 8 o'clock.

Regular Reader: Dr. W. B. Hills, "Chronic Arsenical Poisoning—Analysis of Urine in 300 Cases." Discussion opened by Dr. E. S. Wood.

An important matter of business will come up for discussion. J. G. MUMFORD, M.D., Secretary.

NORFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting will be held at the Norfolk House, Eliot Square, Roxbury, Tuesday, May 8th, at 12.30 P. M.

The Board of Censors will meet at the same place at 12.45 P. M.

The examination of candidates will take place one week later, on Tuesday, May 15th, at 7 P. M., at the office of the Secretary, 130 Warren St., Roxbury. The written examination will begin at 7 P. M., the oral at 8 P. M. After the dinner the "Annual Address" will be given by W. S. Everett, M.D.

The Secretary particularly requests that all who expect to attend the annual meeting to notify him, that he may be able to make suitable provision for the dinner.

JAMES C. D. PIGEON, M.D., Secretary.

APPOINTMENTS.

DR. JOHN L. MORSE has been appointed physician to out-patients to the Boston City Hospital.

DR. W. P. DERBY has been appointed surgeon to out-patients to the Free Hospital for Women.

DR. JAMES M. JACKSON has been appointed assistant pathologist to the Free Hospital for Women.

DRS. JOHN L. AMES and CARROLL E. EDSON have been appointed visiting physicians to the children at St. Mary's Infant Asylum and Maternity Hospital.

RECENT DEATHS.

THEODORE METCALF, a well-known Boston druggist, died in Brookline, Mass., April 26th, aged eighty-two years.

JOHN H. PATTERSON, M.D., M.M.S.S., died in Harwich, Mass., April 29th, of scarlet fever, contracted while attending a family where three children were ill with the disease. He graduated from Dartmouth College in 1886 and from the Dartmouth Medical School in 1889.

ALBERT DAY, M.D., M.M.S.S., died in Melrose Highlands, Mass., April 26, 1894, aged seventy-two years. He lost his father when only a lad and was obliged to go to work, studying at night to obtain his education. He early became an earnest advocate of the cause of temperance in the use of alcohol. In 1856 he was a member of the State House of Representatives and worked hard for the establishment of an asylum for the care and cure of inebriates. On the organization of the Washingtonian Home he was made its superintendent. He entered the Harvard Medical School to make himself more fitted for his work, and graduated in 1866. In 1868 he took charge of the asylum at Binghamton, N. Y., and afterwards established a private asylum. In 1875 he returned to the Washingtonian Home where he remained till a year ago.

ARTHUR HILL HASSALL, M.D., died in San Remo, April 10th, aged seventy-seven years. He was educated at Dublin under the care of his uncle, Sir James Murray, and became a most careful and enthusiastic student with the microscope. His early years in practice in London were largely devoted to the study of histology at St. George's Hospital. In 1852 he published a book on "The Microscopic Anatomy of the Human Body." It contained some four hundred illustrations of his own drawing and was the first complete book on this subject in the English language. He next turned his attention to food adulterations and published in 1857 an exhaustive treatise on "Adulterations in Food and Medicine." In 1866 his health was so affected by the beginning of his fatal illness, consumption, that he was obliged to move his residence to the Isle of Wight. So soon as he had rallied from the hæmoptysis he took up his work in such a new line as was suited to his strength and organized that model system of hospital control of phthisis—known as the separate or Ventnor system. He remained the consulting physician to this National Hospital for Consumptives at Ventnor until his death. In 1877 his health required him to live still farther south and he went to San Remo. Here he retired from active practice, but spent much time in the study of climatic conditions, and in extending his microscopic investigations. He published an autobiography last year entitled "The Narrative of a Busy Life."

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the New England Cremation Society. No. II, 1893. Boston. 1894.

Twenty-first Annual Report of the City Physician of the City of Fitchburg, Mass. 1893.

Early Operations in Head Injuries. By Wm. B. Van Lennep. A.M., M.D. Reprint. 1894.

Three Illustrative Cases of Abdominal Section. By Aug. Schachner, M.D., Ph.G. Reprint. 1894.

Sixteenth Annual Report of the Board of Health of the City of Lowell for the Year 1893. Lowell, Mass., 1894.

Die Behandlung der Leukæmie Kritische Studie. Von Dr. H. Vohsmeier, Arzt in Berlin. Berlin: S. Karger. 1894.

Original Articles.

VARIOLA.¹

BY S. G. WEBSTER, M.D.

DR. ROBERT R. LEO distinguishes between variola and varioloid: "In variola vera will be included all those cases in which the more or less thickly standing pustules show complete development, confluence and their sequelæ resulting therefrom, and in which, shortly after the critical defervescence of the eruptive fever, a new fever of greater or less severity (the suppurative fever) begins. In varioloid, on the other hand, will be included all cases in which the pustules, more or less scattered, do not attain the highest development, but begin their retrocession earlier, and in which after the rapid defervescence of the fever to an unusually low temperature, this gradually returns with slight accidental exacerbation or slight morning remissions and evening exacerbations to the normal height and there remains."²

The first four patients who entered the hospital were from the same house; all had been exposed to the disease by taking care of a friend who had died. None had ever been vaccinated.

CASE I. John S., age twenty-two, blacksmith, was admitted in the afternoon of October 26, 1869. He was taken sick on the 23d. Backache was the chief symptom complained of. On entrance his face was red and swollen, eyes red. No eruption. Tongue coated. Pulse 102.

October 27th. He passed a restless night; passed blood from his bowels several times during the night. There was considerable dyspnea at times, again the respiration was quiet. The whole surface of the body was livid. Occasionally he started up and stood up to assist himself or to get relief, and then fell back on the bed. Pulse imperceptible. Mind seemingly not affected; he answered and asked questions intelligently. He had severe pain during the night, and received two doses of morphia. Stimulants were given, but at quarter to nine he died. No eruption could be seen on face, arms or front of body.

This case is remarkable from its rapid course and sudden termination and the absence of the eruption. It would have been impossible to determine the nature of the disease if the case had been solitary; but he entered with the three others who all passed through the regular stages of the disease.

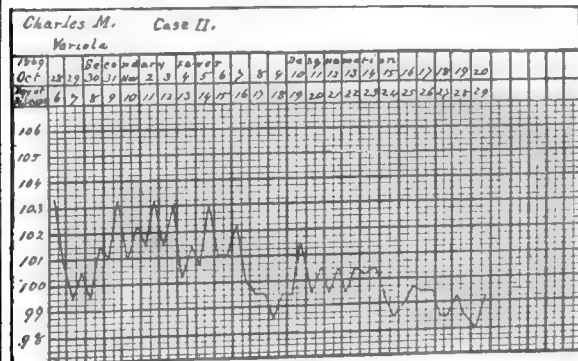
This patient was not a very robust man and had lived rather freely, but on entrance he did not seem to be much worse than the others, only complaining more of headache and backache. He seemed in no special danger.

The next case is one of mild discrete variola, and is a good example of the normal course of the disease except in the slight irregularity caused by his companion's death.

CASE II. Charles M., entered at the same time with the previous case. He had marked initial symptoms commencing at the same time. When first seen

in the afternoon of October 26th, his pulse was 114. The next day a few pimples were seen in the morning, and his pulse was 96; in the evening it was 102, and the eruption was as nearly as possible in the same condition as in the morning. The death of his companion seemed to have made a strong impression upon him, and for about twelve hours there was no advance in the appearance of the eruption as compared with the progress of another patient who came in at the same time with the disease in the same stage.

Subsequently the course of the disease was regular. He was moderately salivated; his face was swollen; the eruption was thick in places, but nowhere confluent. On November 8th he was allowed solid food, his tongue being clean, and he desiring it.



Curve I gives a very fair idea of the normal course of the temperature in mild cases. The temperature was first taken on the sixth day of the disease. It descended not quite to normal; on the eighth day the secondary fever commenced; on the thirteenth day there was a remission which coincided with the commencement of desiccation. On the eighteenth and nineteenth days was an elevation corresponding with the period of desquamation. There was a temporary rise on the thirty-first day, undoubtedly due to headache and pain in the bowels following exposure at an open window with insufficient clothing.

The next case was one of the severest which recovered.

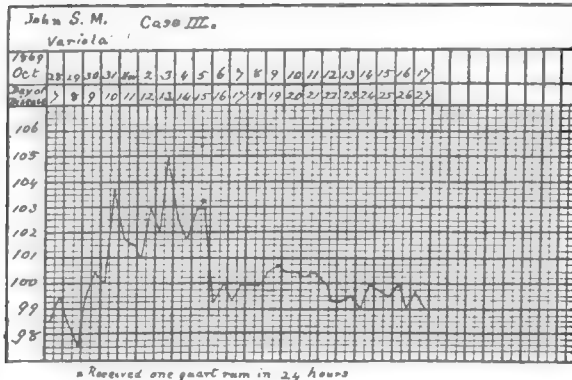
CASE III. John S. M., age twenty-seven, brother to Charles M., plasterer, not vaccinated, entered at the same time with the two previous patients. He first felt sick October 22d, with the usual symptoms. On entrance the tongue was moist, slightly furred; there were pimples and perhaps vesicles on the face, pustules on the hands. The eruption was not then confluent, but very thick. There were a few pustules on the palate. Pulse 100.

He passed a restless night. The next day the eruption was thicker on his face; the pulse had fallen to 78. He was less unfavorably affected by the death of the first case than either of the other two who entered at the same time. His eyes troubled him and his throat was sore; his face swelled so as to close his eyes. On the eighth day of the disease the secondary fever began. On the tenth day it is recorded that he had been slightly delirious at night, and began then to be so in the daytime. On the eleventh day his tongue was dry and slightly dark-colored; pulse 102. The symptoms became more serious; the typhoid condition of the tongue increased, and it could not be protruded beyond the teeth. Subcutis tendinum ap-

¹ The cases on which these observations are founded were under my care in the winter of 1869-70 at the Boston Small-pox Hospital. They formed the basis of a paper which was read before the Medical Observation Society, but has never been published. Much of that paper is here reproduced.

² Bericht über das Auftreten der Pocken im Jacobs Hospital zu Leipzig und Beobachtungen über die kleinen Pocken-Epidemie, Dasselbst im Jahre 1864. Von Dr. Robert Richard Leo. Archiv der Heilkunde, Heft 6, 1864.

peared; chills were frequent; the countenance became dusky. The eruption had become confluent over nearly the whole of the face, but was less abundant on the limbs. On the thirteenth day the pulse was 96, and the delirium continued during the day, though he knew me. He then became noisy and talkative; his hands trembled very much. During the night of the fifteenth day he had a spasm, cried out, kicked, bent his head back by jerks and drew himself down to the foot of the bed; he then fell asleep. The next night he had only one spasm, and that not so severe as on the previous night. He slept more and was less delirious.



While he was the sickest he had nearly a quart of rum in the twenty-four hours; this was reduced as soon as he showed signs of improvement. The eruption gradually dried up, and on the nineteenth day his face was clearing up.

CASE IV. A. B. P., age twenty-three, said he had been vaccinated but it did not "take" well. He did not enter till after the initial fever had subsided. The temperature rose until the twelfth day, when it reached 105.4°. On the fourteenth day a pint of rum was given during the night, and the temperature fell to 101°. Afterwards the influence of a previous malarial poisoning may have shown itself in the high elevation of the temperature every second day.

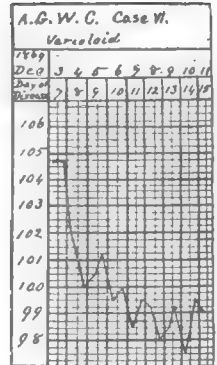
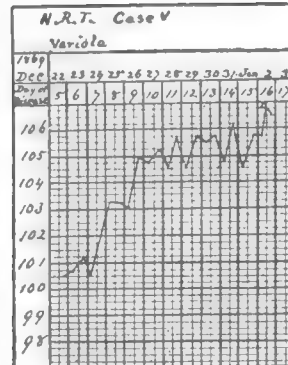
CASE V. N. R. T., bookkeeper, assisted in the care of his brother, who had small-pox. On the 4th of December his brother was attacked, and on the 11th he was vaccinated. On the 18th he felt the first symptom of the disease, seven days after the vaccination and fourteen days after his brother was taken sick.

On his entrance to the hospital the vaccine scabs were large, dried up, surrounded with an areola about three sixteenths of an inch wide. The initial fever seems to have been moderate, the eruption first appeared three days after the commencement of the disease. On entrance there was a scattered eruption of vesicles on the forehead, face and arms. One pustule was on the conjunctiva.

The disease pursued a regular course until the thirteenth day when the pustules changed their character and formed large blisters partly filled with thin, pale-colored serum. He became delirious, the tongue was dry, there was a typhoidal condition, he passed urine in bed, respiration became labored and irregular; on the sixteenth day he died, having convulsions just before death. After his death I learned that he had a succession of severe chills on the thirteenth day. After death the skin became very yellow. He died from pyæmia due to absorption of the pus from the pustules.

The vaccination was performed from five to seven days after the exposure. Though there was an interval of seven days between the vaccination and the commencement of the disease the course of the latter was not modified; he had variola vera. When first seen the vaccine disease appeared nearly normal; if any difference, there was a dryer scab than would have been expected and perhaps more areola.

The next case, of varioloid, shows the contrast between that and variola in the course of the temperature. The case is also of interest on account of the exactness with which the period of incubation is defined.



CASE VI. A. G. W. C., age twenty-two, entered December 3d. He said that he had been vaccinated, and shows two small scars on the left arm, which would generally be considered as of doubtful efficacy. The day before Thanksgiving, November 17th, he stood up in the cars by the side of a man covered with the scabs of small-pox, some of which were dropping off. November 27th he felt a little feverish and on going to bed he took a warm bath. At night, November 29th, he had one or two spots and the next morning more. On entering he had pustules scattered over his face, limbs and body, they were fully developed, some were umbilicated. The temperature on entrance and that evening was high, perhaps on account of his wandering about and getting somewhat excited about finding the hospital.

There was no secondary fever, the temperature steadily falling from the time he entered the hospital.

The period of incubation in this case was only ten days. The eruption appeared two days after the beginning of the disease.

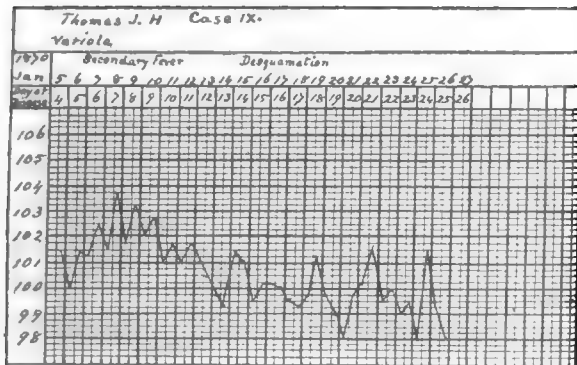
The next case is one of hæmorrhagic small-pox.

CASE VII. Bridget G., age twenty-three, servant, not vaccinated, entered February 8th, was first seen on the 9th. She was taken sick on the 2d, about 11 P. M. The next day she felt better and went to work; at noon she took to her bed with headache, backache, chills and fever. The eruption came out on the fourth. She said she vomited all the time until something was given her which checked it. Her sister said the vomitus was dark.

When seen her mouth was covered with dried blood and sordes, the gums were swollen, tongue dry, gums bled easily. After entrance she vomited about three quarts of a black liquid and passed the same at stool. The face, neck and arms were thickly, and body and legs sparsely, covered with eruption. The catamenia were present, or there was hæmorrhage from the vagina. Pulse was 90, very weak. Aromatic sulphu-

ric acid checked the vomiting and she passed only a little more blood by stool.

February 11th she continued about the same without vomiting but restless until quarter-past eight in the morning when she bled from the mouth and the urine was bloody. About an hour later she died. About two hours before death the eruption began to turn purple and about half an hour before death this became still more marked.



CASE VIII. John T., age thirty-three, laborer, vaccinated, had a rather high fever with a thick eruption, face much congested and swollen. He presented every appearance to lead one to think that he would have the fully-developed disease; but on the ninth day the pustules on the hands were reduced to small red spots with a small crust in the centre; the temperature was low, pulse 66. An alveolar abscess sent the temperature up for two or three days.

CASE IX. Thomas J. H., age twenty-three, was singular only in having symmetrical groups of nearly or quite confluent pustules on the front of the upper part of each thigh, over each instep, and on the median line over the trachea. Each group was situated in a space almost entirely free from other pustules. The course of the temperature was normal, showing, however, rather exaggerated morning and evening remissions and exacerbations during the secondary fever. Exacerbations on the evenings of the eighteenth, twenty-first and twenty-fourth days are not explained, unless he had small abscesses which he concealed, or unless it be due to the character of the eruption which marked this case as belonging to the corymbosae variety.

Dr. Mason in "Reynold's System of Medicine," describes variola corymbosa as rather rare, and a very fatal variety, giving a mortality of 44 per cent. among the unvaccinated, and of 32 per cent. among the vaccinated.

This patient said that he had been vaccinated, but I could find no scars. This was the only case in which the eruption was thus grouped. On the twenty-seventh day he was discharged.

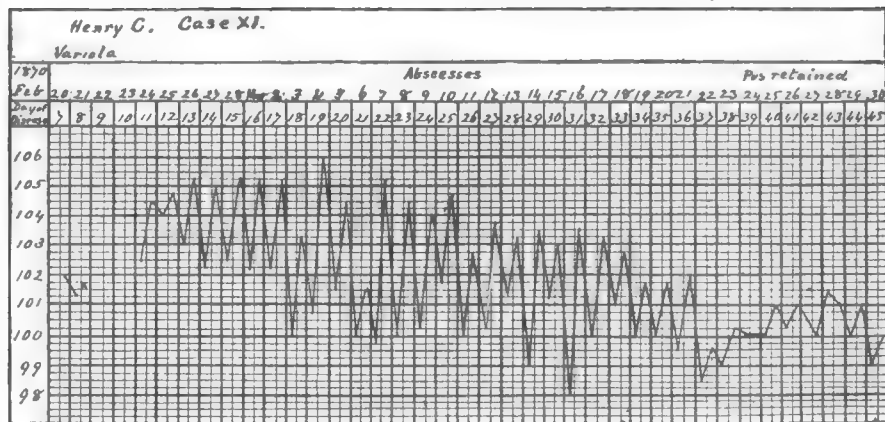
CASE X. L. S., age twenty-five, not vaccinated, was confined with her first child (illegitimate) about two weeks before this sickness. The eruption appeared not quite two days after the first symptoms. She flowed considerably, and had a cough which increased the flow. On the eighth day the eruption became hæmorrhagic, and she died the next day.

CASE XI. Henry C., age thirty-two, had not been vaccinated. He had led rather a dissipated life, and had been in the habit of taking liquor. On February 14th he had pain in back, headache, pretty severe chills, vomited. The eruption came out on the 18th. He entered the hospital on the 19th. He became delirious, so that for three days the temperature was not taken. He became so violent that it was necessary to secure him in bed.

February 24th he had become calm, and during the next week he seemed the same as other patients, except that he had delirium, with trembling, saw large dogs at the foot of his bed, thought he was to be led out to be shot, etc. His temperature was high, his pulse low.

March 1st a few blisters appeared on his legs, which seemed to be formed by the loosening of the cuticle between several pustules. He continued to do well, and took food well until the night between the third and fourth of March. He was again delirious, the temperature rose, and the delirium became of a low, muttering character, with constant picking at the bed-clothes and fingers. It was learned that the attendant had given him articles of food which had not been ordered; more care was taken as to diet, and in two days he was over the delirium.

He had severe abscesses, and a large amount of pus



* Temperatures not taken on account of delirium

collected in the calf and instep, which was evacuated, and fifty days after admission he was discharged well.

Delirium tremens was, in this case, an unfavorable condition. It is not specially mentioned by authors, though it is said that the intemperate are very likely to die. The increase of delirium on the fourth of March was due to the error in diet, but at the time it seemed as though the patient was doomed to die. Probably the inflammation in the leg was also an element in causing the delirium.

The next case gives a very characteristic temperature curve, and the patient was very sick; the prospect for a few days was not favorable, but he recovered finally.

(To be continued.)

DIGESTIVE PARESIS.¹

BY E. N. WHITTIER, M.D.

I offer the term as a composite of the group of functional disorders, of which diminished peristalsis, lessened secretion and delayed digestion are important and representative members. Impaired power is a constant factor in each of these processes.

The muscular tissues of the digestive tube fail to exert their normal influence in the propulsion of ingesta from causes so complex as to elude the careful study of the physiologist in his efforts to determine the underlying, controlling and controllable condition.

We are told that the nervous mechanism of stomachic peristalsis is very obscure: that the quantity of the contents of the stomach is a prime factor in provoking peristalsis; that in the intestine quantity soon ceases to be causative; and that intestinal peristalsis may occur wholly independently of the central nervous system.

It is for the general practitioner not to reason why, but to recognize clearly and to accept as conclusive the doctrine of the important part played in the melancholy drama of digestive disorders by diminution of peristaltic power.

In our study of the deviations from normal digestion induced by changes in the character or in the quantity of the digestive fluids, we find but little to aid or comfort us in the "Theory of Secretion" as set forth by the physiologist; for the stomachic and intestinal secretions—gastric, hepatic, pancreatic and succus-entericus—are paraded as maintaining a struggle mutually destructive—a kind of eternal internal and intestinal vendetta. We are told that pepsin in an acid solution destroys the active constituents of the saliva and of the pancreatic juice, and in its turn is antagonized or destroyed by the bile and the other alkaline juices of the intestines.

Both diminished peristalsis and lessened secretion of digestive fluids, sustain an important causal relation to delayed digestion; it is pre-eminently a result, in the production of which these processes are prime factors, and it is during this delay, induced by impairment of the power needful for the proper performance of digestion, that the major portion of those changes take place in the ingesta, which give rise to the phenomena calling for remedy at our hands.

Delayed digestion is a symptom-complex, into which neuroses disorders, functional and organic, depraved blood states, circulatory derangements of the heart and abdominal viscera enter, and in turn are made worse. Action and re-action in this condition are well-nigh equal; the baneful influence of this process extend to all parts of the body, whose various members conspire to return with interest the unwelcome debt of discomfort.

No condition is more pitiable than that of the chronic dyspeptic. No disorder has a larger following than functional dyspepsia. No class of cases is more vexatious alike to the patient and the physician. The victims of this malady, in ceaseless tramp, vex the corridors of our dispensaries and hospitals, or in melancholy round complete the circuit of our offices.

The general practitioner finds the information gained from careful study of the literature of this subject, inadequate to the task of successful treatment of these

disorders. Good knowledge of what is known of the physiology of digestion and of the functional causes of departures from normal results, is insufficient; it must be complemented by sound judgment and ripe experience, and by a personal influence powerful to control the psychical disturbances which sway the patient from hope to despair, and alternate courage with fear; but, control once induced, it secures the most important contribution to the patient's welfare that can be made, for by no other method can the physician accomplish more satisfactorily the desired object of placing the patient in a position where

"Good digestion wait on appetite,
And health on both."

Prof. Edward H. Clarke, whose portrait-bust adorns this hall, was one of the leading therapists of his day. He combined in largest degree close accurate observation and sound reasoning, essential prerequisites to high attainments in this branch of our art.

No man ever listened to the glowing words with which he clothed his argument on the personal influence of the physician, an argument in which he placed highest and first in the list of remedial agents, the personality of the practitioner, without being convinced of the truth of the words (in which sound logic was combined with sincerity) wherein he presented the therapeutic questions involved in the treatment of the class of disorders of which my subject is a prominent type.

I am not an advocate of the schedule diet system. No man may start the digestive train for a through trip on the main line, with good expectation of making all the connections, and reaching the terminal station free from delays, derangements and derailments. The pneumatic-block system on the intestinal track works harm and not protection. Dietetic rules, formulas and carefully prepared combinations are scheduled for our guidance, and in general they may be said to be right; in many essential particulars it must be conceded that they are too frequently wrong. The situation has not been materially changed since Lucretius (95 B. C.) wrote:

"Quod ali cibus est
Alis fuit acre venenum,"

paraphrased later by Beaumont and Fletcher,

"What's one man's poison, Signor,
Is another's meat or drink."

There are but few conditions in which the patient is more dependent for a good result upon the experience and judgment of the physician; for example, when to employ and when to discard milk; when to diminish or when to abolish starches; when proteids should predominate or be omitted altogether, with the wide range of modifications, combinations and interchanges. One thing I have learned full well, that it is fruitless to oppose the well-grounded convictions of chronic dyspeptics, the result of their experience in following a dietary based upon text-book schedules formulated from processes which are physiological and normal; we must look to other sources for the rules which shall govern our efforts to secure control over functional digestive derangements of the stomach, but more particularly of the intestinal canal.

Changes in the ingesta, effected by digestive secretions, have been carefully reported, in the earlier instance of Alexis St. Martin, by Surgeon Beaumont, U. S. A., and in the more recent (1891) tabulations of MacFayden, Nenckle and Sieber, whose case of an

¹ Read before the Boston Society for Medical Improvement, February 26, 1894.

ileo-cæcal fistula in a woman afforded the unique opportunity of determining changes wrought by the combined effects of all the digestive fluids. The deductions of these observers have been ably supplemented by painstaking experiments carried out in physiological laboratories.

But it must be conceded that these conclusions based upon normal conditions and normal results, sustain unimportant relations, so far as treatment goes, to the abnormal processes which characterize digestive disorders as a class.

A practice which obtains too often, and perpetuates an error which is pernicious, is that of treating these disorders as if the fault was primarily in the digestive apparatus, and independent of the general condition of the patient. Until such views cease to exert their baneful influence, digestive-paretic states must take their chance in common with other frequently misunderstood self-limited disorders, and the lack of success by treatment will continue to be an abiding reproach.

The physician should endeavor not only to attract the patient away from the easily acquired habit of introspection and self-condemnation, and from the "enjoyment of poor health," but he should also and at the same time strive to energize other functions than the digestive. Superficial thought, unformed judgment, or insufficient experience prompts some to overlook the primary and fundamental cause, and to concentrate time and treatment on this only, one of the many symptoms of a depraved general condition.

With your permission, Mr. President, I will depart from the further consideration of this branch of my topic for the purpose of considering the causes and the conditions which have brought into so great prominence the modern method of treating functional digestive trouble. We may not readily discover the explanation for this centring of treatment. The opinion, that it is possible to secure and to maintain internal antisepsis, is strongest in commercial circles; it is a bad day for samples, and for the hoarder thereof when some new synthetical compound or novel coal-tar product is not obtruded during our office-hours. The effort to determine a method by which fermentations in the digestive tube shall be limited, occupies a prominent place in bacterio-physiological work, but as yet no man has succeeded in doing for the physician and internal antiseptis, anything in any degree corresponding to the glorious work accomplished for the surgeon and external antiseptis.

I can find no good evidence of any material advance towards medical antiseptis during the past five years, neither in the literature of the subject nor in the opinion of bacteriologists whom it has been my privilege to consult; and I cannot obtain much promise for the immediate future.

Our distinguished associate, Dr. McCollom, assures me, that although the fulminating power of the bacillus coli communis, when discharged into the peritoneal cavity, notably in cases of perforating appendicitis, has been demonstrated by the results of laboratory work, but little knowledge has been gained of the bacteriology of the digestive anomalies classified as functional.

In spite of the disappointment arising from lack of success in bacteriological efforts to give us controlling knowledge of bacterial processes during digestive disturbances we cannot fail to notice the claims to recent advances in applied therapeutics.

The empiricism of the mercurialist of earlier days

has given place to accurate knowledge of the antiseptic properties of the mild chloride, leading some of its votaries to assign it as prominent a position, as an internal remedy, as that occupied by the stronger chloride in surgical practice externally.

The advocates of quinine as an antithermic, have changed their views since the experiments of Eberth demonstrated so conclusively its power to check the growth of the bacillus typhosus, and his deductions are in keeping with those of Bouchard, to the effect that quinine as an antiseptic holds a higher position than quinine as an antithermic, that reduction of temperature is the result of the arrest of the bacillary development in the intestinal canal and the result of the destruction of toxins in the blood.

We may not reasonably expect any considerable return to the heroic and discomforting doses of quinine in the treatment of diseases of the intestinal canal, not because of any inherent defect in the action of the drug, nor because of any unsoundness in the conclusions formulated, as cited, but because of the lessened inconvenience and the greater precision which now obtains in antiseptic medication by the exhibition of the modern synthetical compounds and notably by the derivatives of the coal-tar series.

Professor Henry describes the difference between antiseptic medicine and antiseptic surgery, as of degree rather than of kind: that surgical antiseptis is so precise that it may almost be counted among the exact sciences; that while antiseptis in surgery is a preventive of the absorption of toxins from a pathological surface, it is subject to limitations in medical practice, because in many instances the processes contended with are in no essential degree departures from physiological; that disinfection within the body is not a simple, but a complex process, in which the agents employed may produce their effect but only after having run the gauntlet of the stomacic and intestinal secretions, exposed to the contingencies of destructive changes immediate and direct, and to the modifications incident to absorption and excretion, in the hope of correcting errors, whose local causative conditions have not yet with sufficient accuracy been defined, a form of a sub-way motor process, "running wild" in the dark, on an unfamiliar track.

Modern medical appliances have given us free access to the stomach and large intestine. Kussmaul and his ardent followers have demonstrated the efficiency of the means employed for the control of fermentative changes in acute and chronic gastric disorders; the ease with which the colon may be flushed, and the comparative safety with which its contents may be rendered relatively aseptic are too well understood to call for remark.

We have, therefore, left for our consideration those measures and those remedies which address themselves to checking the development of micro-organisms in the inaccessible portions of the digestive tube.

Fermentative and putrefactive bacteria cannot be isolated from the contents of the small intestine: even in disorders of function, they abound in numbers and in degree of activity exceeding computation; this, too, in spite of the hitherto accepted "antiseptic property of the bile," which Nencke has demonstrated to have little or nothing of such influence. Bacteriology has proven beyond all doubt the part played by micro-organisms in the origin, development and course of infectious diseases. But until recently it has been suc-

cessfully maintained that the arduous labors of the bacteriologist were without practical results, that disinfection within the body could not be secured, that the disease-producing germs could not be killed, that their growth could not be hindered, that the power of various pathogenic micro-organisms to produce toxins could not be overcome and that once produced the various toxic products could neither be antagonized nor destroyed; but we have great reason for concluding that the situation has been changed, and that the hope expressed by the earlier observers (that some plan of treatment would be devised whereby fermentation and putrefactive changes in the contents of the small intestine would be arrested) has been in considerable degree realized.

The subject of internal antiseptics or disinfection within the living body has, as one of its most prominent chapters, intestinal antiseptics. The literature on this particular topic is voluminous, comprehensive and of large practical value, and the conclusions formulated by the more recent authorities are of deep significance.

The therapeutic problem, to administer such remedies as will supplement the defect in the results of nature's antiseptic efforts, is rapidly progressing towards solution. It still ranks as the foremost therapeutical question of our time, ably set forth as such by Professor Henry in his paper read before the Association of American Physicians in 1891.

Therapeutic intervention is needed in all the cases which correspond in origin and in effect with that of the subject I have the honor to present for your consideration and discussion, and those remedies that promote intestinal antiseptics, with the least danger to the individual, are deservedly assigned prominent positions in the pharmaceutical preparations of the day.

But it is not so much an admission of inefficiency in the modern remedies to induce internal antiseptics, as it is evidence of the more careful study of the many contributing causes of intestinal putridity, that more rigid dietetic rules are now insisted upon; nor do we confess essential defects in the power of the remedies employed to promote intestinal antiseptics, when we insist upon more rigid observance of the rules favoring elimination of the toxins formed within the body, but because the important part played by the skin, the respiratory surfaces and notably the kidneys is now more highly appreciated.

To Selmi, who in 1872 isolated from the products of putrefaction the poisonous alkaloids to which he gave the name of ptomaines, and to Semmola, who but little later instituted a method of treatment designed to destroy the toxic substances developed during the progress of diseases of the intestinal canal, should be given the honor of having been the first to deal intelligently with the great principles of intestinal antiseptics. The aid of chemistry has been invoked in the preparation of remedies which evade the solvent properties of the salivary and the gastric secretions, and remain unchanged until they reach the intestinal fluids, where they discharge themselves of their duty, only as they are split up into their soluble component parts. It is this peculiarity which confers upon the intestinal antiseptics the powers claimed for them by the manufacturers and their gentlemanly representatives. Take, for instance, salol; it is this property of cohesion, until the remedy has found its way into the small intestine, of disintegration as soon as it meets the intestinal fluids, which confers upon it

its high reputation as an intestinal antiseptic. Naphthalin, hydro-naphthol and A and B naphthols belong to the same class, and in combination with salicylate of bismuth have gained prominence; but in spite of the somewhat encouraging contributions to our knowledge of the therapeutics of the naphthol groups, objections to all the members of this series exist to a considerable extent, and are entitled to careful consideration, for these objections are based upon difficulties of administration, of stomachic disturbances following the exhibition of this class of remedies, upon the apprehension that changes in the color of the urine to dark brown and green, as well as painful micturition, are evidences of irritation of the urinary organs, possibly harmful, and because there is ground for fearing that we are not yet sufficiently well informed as to the varying and inconstant degree of toxicity residing in naphthalin, hydro-naphthol and the naphthols A and B.

Enumeration of new combinations might be definitely and unprofitably prolonged. The latest remedies, to the description of whose virtues pamphlets are devoted, are not of necessity the best. The recent eruption of five of the naphthol-phenol-bismuth series in one circular may be accepted as evidence of effort on the part of dealers to satisfy a demand as yet unsatisfied for a safe, reliable and efficacious intestinal antiseptic.

The most recent plans proposed for the local treatment of disorders of the digestive tube, include methods by which there shall be secured for the patient the largest possible freedom from the influence of the micro-organisms and their products, and these plans will be found to be based upon rules which are the outgrowth of bacteriological research and attainments in other directions than that of the subject under consideration; and still further, bacteriological logistics may be relied upon for the correctness of the conclusion that at no distant day concrete examples will be shown demonstrating our control over the major portion of the acute and chronic disorders of the intestinal canal.

Prominent among these plans will be found:

- (1) Measures to favor elimination, notably of the toxins.
- (2) Dietetic rules by which the opportunities for putrefactive changes in the digestive tube shall be lessened.
- (3) Antiseptic medications, or the use of the more recent internal antiseptics, by which better and more than formerly the contents of the small intestine shall be, so far as profitable, sterilized.

While I may claim, with reference to this branch of my subject, that the limitations of bacteriological therapeutics are so pronounced that, in spite of greatly increased etiological knowledge, our power of successfully treating intestinal digestive disorders has not been materially advanced, and that we may, at least, render the verdict "not proven," I am inclined to yield somewhat these pessimistic views, and for the sake of argument, side with the optimist, who considers it providential that such views cannot and do not prevail, and do not control treatment; for he believes that disinfection within the living body has entered upon a career, comprehensive, progressive and well-nigh limitless; he cares but little whether the power to disinfect is exercised directly upon the micro-organisms, upon their toxic products, or because it imparts to the cells of the body an increased power of resistance to toxins. All this is immaterial, for in his opinion the

demonstration is complete, that immunity to a degree hitherto unexpected, and even now with difficulty realized, has already been induced. To him, earnest workers in the physiological and bacteriological laboratories of this and of other countries, present in their carefully-drawn conclusions, arguments of great weight and power, competent to convince the most sceptical, to the effect that preventive medicine has entered upon a new era, a reign of control over disease, wider, deeper and more beneficent in its influence for good, abounding in larger promise of blessing for the sick and suffering than at any period in the history of mankind.

COMPOUND FRACTURES.¹

A STUDY OF THREE HUNDRED CASES.

BY J. G. MUMFORD, M.D.

In reading the articles on compound fractures published during the past five years I have been impressed by the fact that the writers have striven to demonstrate the advantages of certain methods of treatment, and that their short and favorable lists have furnished no proper data for the general consideration of such formidable injuries. To cite a single instance: Mr. Treves, in the *Annals of Surgery* for February, 1893, gives a list of 61 cases, with one death. As this article fails to define the character of the fractures, further than to state that they are of the leg, and aims only at lauding a particular method of treatment, but little can be concluded from it. Other authors deal with the subject in connection only with their treatment of some special fracture or group of fractures, so that the practitioner or student must be often in the dark as to the general characteristics of these lesions.

A year ago I published a paper classifying and analyzing fractures of the skull. In the present essay, therefore, I shall omit the consideration of head injuries, excepting only fractures of the maxillary bones.

It is difficult in an article of this kind to properly limit one's self. A serious railway crush of both femora or of the pelvis, should be ruled out as essentially fatal. A similar crush of one arm or leg should be ruled out when it calls unquestionably for amputation. I shall not consider fractures in the feet and hands, as they are too complicated in their nature, do not in these days seriously endanger life, and nearly always heal up soundly, or call for immediate amputation.

There is a variety of fractures of which I have attempted to treat as conservatively as possible, but which is often hard to classify. Thus, twenty years ago a badly comminuted and lacerated leg would have been amputated. It would not then have come under the head of the injuries I am dealing with. Ten years ago a similar leg would have been amputated by some surgeons and saved by others. To-day we should all save it. To-day, therefore, it is a compound fracture in the sense in which I use the term. But there are fractures seen to-day as to which the question, to amputate or not to amputate, rises. If we amputate, we do not count this case in our list as a compound fracture. If we save the limb by a miracle, we consider the case a clever piece of conservative surgery.

In making up this list, therefore, I have not been able to take into account differences or errors in judg-

ment, and have had to divide this class into cases essentially hopeless and those presumably hopeful. It is under the head of those presumably hopeful that we come subsequently upon our cases of secondary amputation. I shall deal with fractures of the long bones of the extremities, the jaws, the scapula, and the patella, omitting all such cases as are, in the light of to-day, essentially fatal or which call obviously for immediate amputation.

The mortality from compound fractures is high; that of certain bones very high. The general mortality is higher than that from typhoid, pneumonia and certain other acute infectious diseases. The public, certainly, and many physicians, I think, underestimate the gravity of these lesions.

To get at a fair, and, at the same time, a favorable estimate on the subject I have analyzed 300 consecutive cases taken from the Massachusetts General Hospital records for the past eight years.

Out of a total of 300, 270 recovered and 30 died, a mortality of 10 per cent. There were but 9 women and 291 men. One woman died. The following table gives the relative frequency of the fractures:

	Cases.	Died.	Mortality.
Tibia and fibula (both)	111	10	9.009%
Tibia	53	7	13.2
Humerus	33	1	3.33
Femur	25	7	28
Radius and ulna (both)	20	2	10
Inferior maxilla	14	0	0
Patella	9	0	0
Humerus, radius and ulna (elbow joint)	8	1	12.5
Radius	8	1	12.5
Fibula	7	1	14.28
Olecranon (distinguished from ulna)	4	0	0
Ulna	3	0	0
Humerus and ulna (both)	2	0	0
Femur and tibia	1	0	0
Scapula	1	0	0
Superior maxilla	1	0	0
Totals	300	30	10%

From this list it will be seen that 37 per cent. of all the fractures are those of the tibia and fibula together; 17.6 per cent. are of the tibia alone, and 2.33 per cent. of the fibula alone. Practically, fractures of the leg constitute 57 per cent. of all the compound fractures in this list. The forearm comes next with 11.6 per cent., the humerus with 11 per cent., and the femur with 8.33 per cent., the lower jaw with 4.66 per cent., and the patella with three per cent. The other fractures—those of the scapula, upper jaw and unusual joint complications—are so rare that they may be classed as surgical curiosities, and together make up less than 5 per cent. of all the compound fractures. I have purposely omitted from the list fractures of the nose, as they were seen only in the out-patient department and could not be properly followed up.

Since these cases are taken as they occur in routine practice and are not selected for purposes of treatment demonstration, as they are seen by a number of different surgeons, but follow a regular routine of treatment, I will sketch out briefly the method of the management, when uncomplicated.

With rare exceptions ether is given in all cases of compound fracture.

In the reduction of fractures of the leg no unusual plan is followed. Some years ago division of the tendo-Achillis was thought to be of advantage when there was great over-riding of fragments, but experience showed this manœuvre to be of questionable advantage. The usual shaving, scrubbing, syringing and

¹ Read before the Boston Society for Medical Improvement, February 26, 1904.

general disinfecting of the limb have been thoroughly carried out for many years. Chlorinated soda, sulpho-naphthol and bichloride are the favorite washes used. The leg is then put upon a Cabot splint and dressed. This splint is a simple wire frame, made from a single piece and bent so as to fit the ankle and knee. The wound is dressed, simple wooden side-splints are put on to prevent lateral bowing, and the apparatus is bandaged above and below the site of the fracture. An unenclosed area is left open for the renewal of the dressings.

The only variation in this style of treatment for many years has been in the first dressing of the compound opening. Up to 1891 it was the almost invariable custom to establish the freest kind of drainage. If necessary, to enlarge the wound; usually to make counter-openings, as dependent as possible. Stitches were rarely taken, and a primary union was seldom expected. Within the past three years drainage has become much more infrequent, for reasons which I shall subsequently discuss; and stitching, with primary union, has been common. Plaster as a first dressing has been rare. After the wound has become simple, however, the limb has been put up in a plaster splint and the patient given crutches. The method of treatment by these posterior wire- and side-splints has long been deservedly popular with those accustomed to their use. The splints are light, simple, easily kept clean, readily applied, quickly changed, and provide most conveniently for secondary dressings without disturbing the limb.

Fractures of the thigh are put up in an extension apparatus of some kind—the long Dessault or the Bucks—with a posterior and long outside splint, conveniently arranged for proper dressing of the wound.

The patella fracture is put on a posterior splint, with coaptation splints to control the quadriceps femoris.

Fractures of the upper extremities are put up in a variety of apparatus, consisting usually of shoulder cap, coaptation splints, internal angular at the elbow, and anterior and posterior splints for the forearm.

It is not my object in such a paper as this to discuss the relative merits of the various apparatus devised for these injuries. So long as the fragments of a bone are securely immobilized, with due regard to the patient's comfort, it is of small moment what the style of apparatus may be. I am most decidedly of opinion, however, that proper provision should always be made for subsequent dressings and care of the wound *in situ*.

Fifty per cent. of these 300 fractures were due to crushes, and a large majority of these crushes were sustained in railway accidents. I have previously called attention to the extremely serious nature of these accidents. A description of the results of such crushes and of the pathological conditions ensuing is given by Dr. Alexander Ogston, of Aberdeen, in the *Medical Chronicle* for November, 1888. The bones in these cases are nearly always comminuted, the soft parts are severely lacerated, and there is frequently a resulting bone necrosis. Of these 151 cases of crush, 102 were comminuted and lacerated, with a resulting necrosis in 26. Twenty-one of the total 30 deaths followed crushes; so that we may say that the mortality after crushed fractures is 13.9 per cent. I do not, of course, include those cases which are essentially fatal.

Fractures from horse-kicks I have put in a special class. This may be fanciful, but I find that in

these cases comminution is very common, primary union rare and long suppuration frequent. There were 24 of these cases, with a mortality of 4.16 per cent. Of other fractures, from blows there were 27, with a mortality of 7.4 per cent.

Next to crushing accidents the most common cause of a compound fracture is a fall. Of these there were 100, with a mortality of 6 per cent. It would appear from a study of the tables that fractures from this cause are the least severe of all, and the prognosis good. The violence is indirect, comminution uncommon and laceration slight. Here we may stitch with a good prospect of primary union, and usually without drainage.

Four cases of bone necrosis and 13 of comminutions are divided between the classes of blows and falls.

In the whole list, though, I found bone necrosis recorded less often than I should have expected. It occurred 30 times, a proportion of 1 in 10. One of these died of prolonged suppuration, after two operations for the removal of sequestra. Twenty-one cases in all required these secondary operations. The longest in healing after the primary accident was twenty-four months, the shortest was three months.

In a carefully treated hospital case *ununited fracture* is a great rarity. The reason probably is that the rigid hospital discipline, the admirable dietary and good hygienic surroundings, favor proper and rapid union. Many cases of non-union which I have seen in private practice were directly traceable to the negligence of the patient himself.

In my hospital list there are records of but seven ununited fractures: Four of the humerus, two of the radius and ulna, and one of the femur, all were eventually wired, and recovery ensued.

Fractures with joint complications were found to be quite common in the list, but the mortality during the past three years has been surprisingly low, and useful joints have frequently resulted.

Joint.	Totals.	Excised.	Ankyloid.	Died.	Motion.
Knee	13	0	9	1	3
Shoulder	1	1	0	0	1
Ankle	9	1	5	1	3
Elbow	26	7	6	0	20
Wrist	1 (gangrene, amp. 3d day)			1	0
Totals	50	9	20	3	27

The total number of joints involved is seen to be 50, with 3 deaths, a mortality in joint fractures of 6 per cent., a lower mortality than the total average of 10 per cent. The fact that prompt and thorough excisions were done in nearly all desperate elbow fractures, which include a majority of all the joint fractures, accounts partially for this low mortality. In the elbow fractures which are amenable to more conservative treatment it is gratifying to see how, in recent years, a recovery of function has followed thorough antiseptic treatment without excision. There were 19 elbow fractures not excised, 13 of these cases recovered with good movable joints. Several of the 6 ankylosed cases were directed to return for subsequent resection, but their records I have been unable to trace. Most of them probably preferred to remain as they were, with the elbow at a right angle.

That 9 out of 13 knee-joint fractures remained ankylosed must be considered a good result relatively. Three recovered with motion, and but one died. It is a fair presumption that more of the cases would have recovered with motion, had they persisted in the use

of passive movements—a manoeuvre so difficult to properly carry out with hospital patients.

Of the 7 elbow resections it should be said that 3 were primary and 4 were secondary, or after the third day, when it became evident that a useful joint could not be saved. They all recovered well, the average length of convalescence being six weeks.

The one ankle-joint excision was secondary, in a middle-aged alcoholic subject, after two months of suppuration. He recovered with a fairly useful false joint.

There was one primary excision of the head of the humerus, with a satisfactory joint resulting.

Aside from the joint excisions the humerus was resected twice, and the bones of the forearm once. A total of 12 resections with excellent results in all.

Primary wiring of bone was done 27 times. Twenty of the cases got good union, and 7 had necrosis. It is noticeable that these 7 cases of necrosis were treated by the open method, that is, the wound was left unsutured and the wires extruding.

One of the cases of compound ankle-joint was complicated by laceration of tendons. The tendon of the extensor proprius pollicis was sutured, and good union followed. The man recovered with a movable joint.

As was said at the beginning of this paper, those cases of compound fracture are excluded which are essentially fatal. The question immediately rises, What cases are these? I admit at once that such a question cannot be accurately answered, but that the decision must be left to the individual surgeon. A vast number of very serious injuries are in these days survived, in a manner which would have astonished our fathers, so that we have come to regard hopefully the most grave and extensive lesions. Prosperous looking cases do occasionally die, however. I have found in this list six causes of death. They are: sepsis, shock, delirium tremens, fat embolism, gangrene (as distinguished from the ordinary suppurative processes), and nephritis.

Sepsis does not appear to have decreased materially within the past eight years. There were 20 cases with 10 deaths; a total mortality from sepsis of 3.33 per cent. In 1885 there were 4 cases; in 1886, 2 cases; in 1887, 2 cases; in 1888, 2 cases; in 1889, 3 cases; in 1890, 3 cases; in 1891, 1 case; in 1892, 1 case; in 1893, 2 cases. Secondary amputation was done in 3 of these with 1 fatal result; 7 died of septicaemia, and 3 of pyæmia. There were 3 cases of erysipelas, all of which recovered.

Of course, all of these septic cases received the most thorough antiseptic treatment; the favorite local application being baths or constant irrigation with bichloride or sulpho-naphthol.

The age of the patient in sepsis seems to have had no bearing on the result. Those who died ranged from nineteen years to sixty-five years. There were among them 3 fractured femora, 6 fractures of the leg and 1 of the radius.

The nature of shock and collapse is still so uncertain that it is difficult to distinguish them always from other conditions, notably embolism. Those cases which entered the hospital and died within twelve hours I have included in the list of essentially fatal cases. There were 15 cases besides these which fell into a condition of shock subsequently, the effect of operation, ether or secondary hæmorrhage; 8 such cases survived and 7 died.

There were not many recorded cases of delirium

tremens: 9 in all, and 6 of these died. The deaths were obviously due to delirium tremens. It happened that none of the injuries were especially severe. The injuries of the three survivors were as bad as any, but the men averaged much younger. It is recorded of one that he was cured of drinking, and a year after his discharge was a total abstainer. Contrasted with him was an individual who gave his name as Yale College. He was a negro. His injuries were comparatively trivial; but he died on the tenth day, after a week of delirium.

There are 8 recorded cases of fat embolism, with death and autopsy. All of them were due to extensive crushing of the leg.

One man died of an acute, presumably septic, nephritis, which certainly was not present when he entered the hospital; and three died of gangrene for which secondary amputations had been done fruitlessly.

	Recov'd.	Died.	Mortality of Total Fracs.	Totals.
Sepsis	10	10	3.33%	20
Shock	8	7	2.33	15
Delirium tremens	3	6	2	9
Fat embolism	0	3	1	3
Gangrene	7	3	1	10
Nephritis	11	1	33	12

Deaths 30 (10%).

Some of the cases of gangrene were most unexpected. One boy with a simple crack through the tibia, no apparent complications and excellent circulation in the foot on entrance, developed gangrene, and died three days after an amputation.

Secondary amputations were not common, however. There were but 20 in all: 7 of the humerus, 5 of the forearm and 8 of the leg.

One young man with a compound elbow eloped on the first day. He returned for amputation on the seventh day. Extensive gangrene had set in.

Of all fractures of the humerus, 21 per cent. required secondary amputation, of forearms 16 per cent., and of legs 7 per cent.

Though the figures would show that acute general sepsis is about as common now as it has been at any time within the past eight years the records prove, without question, that the general results obtained in the treatment of compound fractures are vastly better than they were eight years ago, and that within the past three years, especially, there has been most marked improvement. Local suppuration is much less common. Five years ago a certain amount of suppuration was expected; but since January, 1891, there are but 15 recorded cases. In the five previous years there were 89. In the suppurating cases recorded the mortality takes a decided jump upwards, as we should expect; 34 per cent. died.

There were a few remarkably good results as far back as 1885, when a case of fractured leg was recorded well in two months. Last year a comminuted leg was simple in one day and sound in two months, without exciting especial comment. In the same year a compound forearm became sound in six weeks.

A study of the modes of treatment employed in the last decade and in this, convinces me that the improvement in results is not due to any radical change in method. Indeed, the methods are the same so far as the sterilizing of the wound and its dressing are concerned.

Why is it then that to-day we can so frequently dis-

pense with drainage, especially with the former numerous counter-openings? In the old days that omission would have been thought madness, and when tried led almost invariably to extensive suppuration. As it is, the older charts show regularly a temperature elevated for ten days or a fortnight. Stitching the wound up tight was seldom practised five years ago. It is frequently done to-day, with a resulting primary union. Very often now, after the first dressing, the wound is left sealed for two or three weeks, when the dressing is removed and the fracture found simple. The result is that to-day a permanent plaster splint is put on within a month of the accident, and that a great many of these cases give no more trouble than do simple fractures.

The reason for this gratifying advance lies in the fact, I believe, that the environments of our surgery are clean. It has taken many years to accomplish this in an old hospital like the Massachusetts General; but the results in all branches of surgery seem to bear out the statement. Patients used to be carried into an accident-room which must have been septic, and in spite of the most scrupulous care in the management of the wound it very often became contaminated. To-day I believe that the accident-room is as clean as the abdominal ward.

In this list it will be seen that the average time of healing is rather less than stated in the standard books. Excluding such complications as humerus, radius and ulna (elbow-joint), humerus and ulna (elbow), and femur and tibia (knee), the order of the bones, arranged according to their rate of healing, is as follows:

	<i>Longest.</i>	<i>Shortest.</i>	<i>Average.</i>
Superior maxilla	1 mo.	1 mo.	1 mo.
Scapula (body)	2	2	2
Inferior maxilla	6	1	2.4
Ulna	4	2	2.5
Radius	12	1.5	3
Radius and ulna	12	1.5	3.5
Humerus	8	2	3.5
Olecranon	8	3	4.7
Tibia	24	2	4.7
Fibula	13	2	4.8
Tibia and fibula	28	2	5.6
Patella	12	4	6.6
Femur	24	3	8

Some of these averages, such as upper jaw and scapula are of little value, as they are taken from too few recorded cases. The number of these cases is significant, however, as indicating their rarity.

All the fractures of the lower jaw did well. Even with extensive comminutions there were but few necroses. Methods of treatment were diverse; but it is worthy of note that by far the best results were obtained from the use of inter-dental splints, furnished and fitted by the Dental School.

Of course, it is almost impossible to keep these fractures aseptic, and sinuses often persist until the bone is sound.

There were but 3 fractures of the ulna alone, all of which united well without any complications. The infrequency of fracture of this bone, alone, excluding fractures of the olecranon, is due to its deep position. Its fracture is almost always accompanied by fracture of the radius.

Compound fracture of the radius alone is not very common. There were 12 out of the total 300. The radius is usually fractured by falls on the wrist, and this is an unusual seat of compound fracture unless from a crush or blow. If compound, the wrist-joint is

liable to be opened. In one of the cases this resulted in death.

Both bones of the forearm are frequently the seat of compound fracture, and non-union is not uncommon. Out of 20 cases, 10 per cent. died. In treating fractures in the forearm it is not very easy to obtain immobilization except with plaster splints. As in fractures of the leg, however, primary union of the soft parts is more common than it was, and the bony unions are more rapid than they once were, the resulting callous less and good rotation more certain.

Perhaps the most difficult to treat of the ordinary compound fractures are those of the humerus. It is almost impossible to immobilize this bone in any apparatus which will admit of easy access to the wound for dressings. The practice of fastening the arm to the side and fixing the shoulder- and elbow-joints is the most practicable and common, but necessitates some movement of the arm for dressings.

From the surgeon's point of view an extension apparatus, similar to that used in thigh fractures, with the patient in bed and the arm extended at right angles is very satisfactory, but it is almost impossible to get patients to submit to such confinement.

Owing to these difficulties we find a majority of our cases of ununited fracture to be of the humerus. Secondary amputation of this bone is likewise most common. Out of 33 fractures of the humerus four resulted in non-union, as against 3 non-unions in 267 of all other fractures. Secondary amputation was done in 7 cases of the remaining 29, which leaves us but 22 cases in which good early union took place. Hence it appears that our prognosis in all these humerus cases should be very guarded. It is positively good in but 66.6 per cent., according to these statistics.

Fractures of the olecranon are interesting mainly on account of its relation to the elbow-joint, and its inefficient blood-supply. When compound, its treatment is subordinated to the question of saving the joint. It unites more slowly than the humerus, but has a lower mortality.

There is little to add to what has been already said in regard to compound fractures of the leg, except in regard to the rate of healing. As would be expected, fractures of both bones heal more slowly than those of one. The difference in rate being one month. The tibia, when fractured alone, is sound in about four and one-half months, both bones in about five and one-half months.

There is an average and fairly definite relation between the time a fracture becomes simple and the time it may be pronounced healed. If the fracture does absolutely well and there is no necrosis this relation is as one to five. If a leg is simple in one month the bones will be sound in five months. This is true, too, of the very short cases. Two cases which were simple in ten days were sound in two months. If there is necrosis and long suppuration, the ratio may be as four to five, or the bone may become sound before the wound is simple, and the figures be reversed.

It seems that certain fractures of the leg are especially liable to suppuration. All the compound Pott's fractures suppurred; and as this is the common fracture of the fibula, it will be seen that this bone when fractured alone heals more slowly than the tibia alone.

None of the patellar fractures died. Most of these were wired. Three recovered with good motion in the knee and in six there was resulting ankylosis.

As would be expected, by far the highest mortality was in fractures of the femur: 28 per cent. of the 25 cases. The great difficulty in rendering lacerations of the thigh aseptic, and the shock in these injuries, were the causes of death. Some of the cases, however, recovered with remarkable rapidity. The shortest convalescence was that of a young man of twenty-four, who walked safely after three months. Eight months, however, was the average length of convalescence.

In collecting data for these conclusions my difficulties have been very great. Fortunately many of the ultimate results appeared in the hospital records, and a great number of the patients answered my notes of inquiry. The results, as regards deformity, were especially gratifying to note. The worst deformities were from crushes and horse-kicks; but after the lapse of years they have frequently become less noticeable, and very rarely have the functions of limbs been impaired after permanent bony union.

It seems fair to briefly conclude from this hasty review of so extensive a subject that, though the mortality is relatively high, still we have made within recent years a decided advance in our treatment of this class of cases; and that our success is not so much due to any special variety of apparatus or method of treatment, as to our perfection of technique in working on the broad lines of aseptic surgery.

Clinical Department.

SATURATED SOLUTION OF POTASSIUM PERMANGANATE IN THE TREATMENT OF CHRONIC ULCER.

BY F. B. WAUGHOP, M.D.,
Intern at Boston City Hospital.

LAST summer, in the surgical out-patient department of the Boston City Hospital there were a number of very obstinate cases of chronic ulcer. Poultices of corrosive sublimate (1-1000), creoline (1-1000) and of Labarraque's solution were faithfully employed; as also strapping and the tin-plate method; but without success. Iodoform, aristol and calomel powders were also unavailing.

Permission was then obtained to try the saturated solution of potassium permanganate on these cases. The results were extremely gratifying. One typical case is herewith submitted in full and a summary given of twenty-four others—ulcers, abscesses, old sinuses, etc.

CASE VIII. Ulcer just above left internal malleolus. Size of a quarter-dollar and one-quarter of an inch deep, the bottom being covered with a greenish slough.

This ulcer had been present for four years, with very little variation. It had been treated at various times with poultices of corrosive sublimate (1-1000), the last time once every two days for three weeks. The poultices served merely to stop the sloughing without showing a tendency to heal.

Permanganate Treatment.—The slough was swabbed out, and the ulcer flooded for ten minutes with the permanganate solution (severe smarting being produced the first two minutes). It was next sponged dry and loosely packed with narrow strips of gauze soaked in the fluid. A heavy permanganate poultice (gauze three inches square, dripping-wet with the solu-

tion) was then applied, covered in with oiled paper, and bandaged as lightly as possible with cheese-cloth. This method was repeated every day for a week. On the eighth day the granulations were flush with the surface. Two days of subsequent treatment with eucalyptus vaseline was followed by the formation of a pellicle over the granulations. (Patient disappeared.)

CASE I. Gangrenous ulcer of leg. Size of dollar, and three-quarters of an inch deep. Corrosive three weeks, without effect. Permanganate heals in ten days.

CASE III. Old ulcer of leg. Superficial, two inches by one and one-half inches. Corrosive creoline, flaxseed, and boric acid ointment five weeks, without effect. Permanganate applied every other day, heals in ten days, that is, five applications were made.

CASE X. Ulcer of leg, two years' duration. Three inches in diameter by one-quarter of an inch deep. Bread-and-milk poultice two months, without effect. Permanganate, in three weeks, reduces ulcer to one-half the size. (Patient disappears.)

CASE XI. Ulcer of leg, twelve years' duration. Size of quarter-dollar, one-half inch deep. Corrosive four months, without effect. Permanganate heals in six weeks. (Patient came only twice a week, and was on his feet constantly, doing heavy work.)

CASE XII. Ulcer of leg. Three inches by one and one-quarter of an inch deep. Corrosive one week, without effect. Permanganate every other day for three weeks reduces to a superficial ulcer the size of a dime. (Patient disappears.)

CASE XIII. Ulcer of leg. Size of dollar, and three-quarters of an inch deep. Very foul. Tar ointment six weeks, without effect. Permanganate heals in fourteen days.

CASE XV. Ulcer of leg. Two inches in diameter and one-eighth of an inch deep. Corrosive two months, without effect. Permanganate heals in seventeen days.

CASE XX. Ulcer of leg. One inch in diameter by half an inch deep. Linseed poultices, carbolyzed ointment five days. Action too sluggish. Hastened to a cure by permanganate in eleven days.

CASE XXIV. Ulcer of leg. Size of a half-dollar; one-quarter of an inch deep. Permanganate produces severe dermatitis. Heals slowly under iodoform ointment in nine weeks.

CASE XXVI. Ulcer of leg. Size of dollar, three-eighths of an inch deep. Corrosive two weeks, without effect. Permanganate, used every other day, heals in fifteen days.

CASE XXVII. Ulcer of leg. Tuberculous? Two and one-half by one and one-half by one and one-quarter inches. Corrosive seventeen days, without effect. Permanganate, at irregular intervals, heals in a month.

CASE XXXI. Ulcer of leg. Three by two by one and one-half inches. Corrosive two months, without effect. Permanganate heals in two months. (Patient came only twice a week and was constantly doing heavy work.)

CASE XXXIII. Ulcer of leg. Two and one-half inches in diameter and three-fourths of an inch deep. Permanganate in fifteen days reduces to about one-half the original size. Then twenty days of flaxseed poultice. Ulcer remains stationary, and sloughs a few times. Then healed by permanganate in seventeen days.

CASE IV. Abscess of arm. Size of quarter-dollar, and one-quarter of an inch deep. Packed one week with iodoform gauze. Remains sluggish. Packed

with permanganate gauze, (that is, strips of gauze wet with permanganate). Well in five days.

CASE XIV. Abscess of forearm. One-quarter of an inch in diameter by three-quarters of an inch deep. Packed with corrosive three days, without effect. Permanganate gauze cures in one week (five applications).

CASE XVI. Abscess of abdominal wall. One and one-half inches in diameter, superficial. Iodoform ointment six weeks, without effect. Permanganate gauze heals in fourteen days.

CASE XIX. Abscess of arm. Size of dime, superficial, very foul. Aristol ointment two weeks, without effect. Permanganate gauze heals in one week.

CASE XVII. Old suppurating sinuses along course of palmar tendons. Hydrogen peroxide and iodoform gauze ten weeks, without effect. Permanganate gauze (used every other day) heals in five weeks.

CASE XVIII. Suppurating gland of neck. Packed with iodoform gauze two weeks, without effect. Permanganate gauze heals in two weeks.

CASE XXIX. Cellulitis of thigh. Corrosive and iodoform gauze sixteen days, without effect. Permanganate heals in twenty-six days.

CASE V. Crushed fingers, sloughing. Iodoform gauze and creoline for one week. Too sluggish; little progress. Permanganate heals in ten days.

CASE XXII. Sloughing lacerated wound of hand—gunpowder. Iodoform gauze six weeks. Improvement steady, but too slow. Laceration reduced in ten days by permanganate, from size of dollar to complete disappearance.

CASE XXV. Crushed foot, sloughing. Eucalyptus vaseline three weeks, and black wash two weeks, without effect. Permanganate heals in sixteen days.

CASE XXI. Sloughing chancroids. Aristol ointment for twelve days, without effect. Permanganate heals in six days.

The above are fair examples. Several hundreds of these non-syphilitic cases were treated in this manner during July, August and September, 1893.

The main disadvantage is the pain, which may be very sharp from one to five minutes after application (sometimes twenty minutes, in the case of anal fistula). It then ceases altogether. Rarely, also, a dermatitis is produced.

If the granulations became over-stimulated, weak myrrh wash, lead and opium wash, or some one of the antiseptic powders, or bland ointments was substituted for permanganate until the indications ceased. Moreover, permanganate was usually supplanted by one of these dressings so soon as the ulcer was filled even with the surface, in the normal process of healing.

The patients mentioned above as "disappearing" were those who considered themselves cured, and felt too busy to make their final appearance at the hospital. The corrosive used in the above tests was always 1 to 1,000.

Very good results were obtained in a few cases of anal fistula which were slow to granulate after operation.

Saturated solution of oxalic acid was found to be the best reagent for removing the stain from the hands.

AN International Congress of Sea Bathing and Marine Hydro-therapeutics will be held at Boulogne-sur-Mer from July 25th to 29th.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

METHODS OF TEACHING ANATOMY.

THERE has been a good deal of writing on this ever fresh, though well-worn controversy, in the English medical papers towards the close of 1893. The central figure in the discussion is Professor Macalister, perhaps the leading anatomist of Great Britain. He wrote a paper¹ in which among other things he discussed the relation of the study of frozen sections to dissection. Without depreciating the latter he taught that the former should be used for supplementary study. Dissection he defines as the art of removing the connective-tissue from around parts so that they can be properly seen. This must, of course, disturb the relative position of parts. "The most skillful anatomist, when he opens the body cavities, must displace the viscera in relation to the landmarks, and cannot avoid doing this to such an extent that, like the fallen Humpty Dumpty, all the members of the Anatomical Society of Great Britain and Ireland cannot put them back as they were before. . . . Dissection is the only way of learning structure and details; sectional study is the only way of learning relations."

This teaching did not please the old-fashioned anatomists who must of late have been chagrined at seeing the rise of new methods. Mr. Thomas Cooke² says, "The conception put forth by Professor Macalister is not new. It is substantially the same—popular errors are long-lived—with which I was familiar as a student in Paris that to the surgeon, the body (to use the metaphor of the day) should be, so to speak, like glass-transparent." He then goes on to prove, what every one will admit, that this is not necessary for tying arteries which are reached by following certain successive guides. In regard to the statement that the study of frozen sections is the only way of learning relations, he says that it is only some twenty years since these were heard of, and asks "Were anatomical relations but imperfectly understood by Callender, Fergusson, Wood—to name only British surgeons who are no longer with us?" No one seems to have replied to this challenge, but trusting to three thousand intervening miles of ocean, we venture to say that we do not believe one of those surgeons knew the position of the stomach, the shape of the liver, of the spleen or of the pancreas; we may add that Wood taught the true relation of the arch of the aorta which he had learned by the sectional method somewhat crudely applied.³ Symington in an address extols frozen sections, Cunningham uses them freely. We are sure that they have come to stay in Great Britain and Ireland, despite the old-fashioned exponents of what Goodsir called "scalpel and forceps" anatomy. We trust that this will never be superseded but only supplemented by modern methods.

Another point about which the discussion has raged is the value of embryology and morphology in the anatomical course. Macalister holds that anatomy taught from a morphological standpoint is more inter-

¹ British Medical Journal, October 21, 1893. There seems to have been a previous pamphlet by Mr. Thomas Cooke, which we have not had the advantage of seeing.

² The Lancet, November 4, 1893.

³ Journal of Anatomy and Physiology, vol. III, 1868.

esting, more intelligible, not less practical. Mr. Cooke⁴ retorts in effect, not without justice, "Yes, because you know these things; but they would not be worth much if taught by one who had crammed them."

This is one of the questions which, it seems to us, can never be categorically answered, because the proper solution depends on the knowledge and the good sense of the teacher. He will make his lectures both more valuable and more interesting by giving glimpses of something beyond, thus explaining facts like the difference of the right and left recurrent laryngeal nerves, which at first sight seem unaccountable freaks; but his tact must not let him wander too far.

THE INFLUENCE OF FUNCTION ON THE SHAPE OF BONES.⁵

Dr. R. Havelock Charles, Professor of Anatomy at Lahore, has written two papers of peculiar interest on the bones of the lower extremity of the natives of the Panjab. At the beginning of the second paper the author gives a summary of the first, which we will quote in his own words, almost in full: "It was shown that the articular surface of the head of the femur was relatively and absolutely greater than in the European, and that it was prolonged so as to adapt itself to the modified *facies lunata* of the cotyloid cavity. That the upper surface of the internal condyle of the femur is partly articular. That the upper surface of the internal tuberosity of the tibia slopes considerably down and in, being never flat. That the external tuberosity has its condyloid articular surface convex from before backwards, and that the articular area is well prolonged down posteriorly. That a facet or facets were to be found on the anterior surface of the lower extremity of the tibia for articulation with similar surfaces on the neck of the astragalus during extreme flexion, or during extension or extreme adduction of the ankle-joint in the squatting and sartorial postures. That on the neck of the astragalus were one or two facets—one external, one internal—the latter continuous with the pyriform malleolar articular surface."

The application of these facts is in brief that the orientals do not sit in chairs, but habitually either squat or sit crossed-legged, for which positions these modifications offer distinct advantages. Now characteristics similar to these are found in the oldest prehistoric bones, and have been advanced as evidence that the knee could not be fully straightened, nor the upright position maintained. They show nothing of the kind, for the native of the Panjab can stand as straight as any, though he can squat as civilized races cannot.

Professor Charles argues that while orientals have retained the sitting postures of their ancestors, Europeans have not, and consequently have lost through disuse the bone peculiarities pertaining thereto. The oriental, on the contrary, inherits as young bones proclaim, "variations in structure acquired by his ancestors, and transmitted, with accumulations due to continuity of like habits, as useful heritages." Hence he concludes the transmission of acquired characteristics is possible.

This very important line of argument that certain peculiarities of ancient bones depend upon function and posture, has been already pursued by Mr. Arthur Thomson and by Manouvrier.

⁴ Lancet, November 25, 1893.

⁵ Journal of Anatomy and Physiology, vol. xxxviii, October, 1893, and April, 1894.

A DIGITO-DORSAL MOVEMENT PECULIAR TO MAN.

While reading this paper by Monsieur Eugène Mouton⁶ we have repeatedly asked ourselves whether it was meant as a joke, or as a satire, or as a serious communication. We have finally accepted the last alternative, though not without some misgivings. The movement in question is made as follows: put the forearm behind the back with the palm outward; then flex the wrist as much as possible and turn the palm in. Then extend the wrist and stretch the fingers out as high up the back as possible, that is to the fourth dorsal vertebra. Thus man can touch with his fingers all parts of his body, which according to our author no other animal can do. This is indeed self-evident till we come to the monkeys and apes. The author found that he was able forcibly to put the arms of the monkeys callithrix and rhesus into the required position, but that they did not execute it naturally. This could not be done to the orang nor the gibbon. The very length of the arm made the movement impossible. For the same reason it would seem to be impossible for the chimpanzee and gorilla, though the test could not be made. To our mind the most interesting point in the paper is the additional evidence that some of the lower monkeys more closely approach man's bodily structure than do the so called anthropoids.

THE RELATIONS OF THE HEART AND LUNGS TO THE ANTERIOR CHEST WALL, AS DETERMINED BY COMPOSITE PHOTOGRAPHY.⁷

Dr. I. S. Haynes has written a very interesting paper on this subject, which we do not mean to undervalue when we say that the method is the best part of it; for we cannot accept conclusions based on the analysis of only three series of observations. The method is in brief as follows: By way of stating positions not easily referred to cartilages he draws an imaginary median line downward from the supra-sternal notch and at definite points on it draws lines at right angles to it of known length. Thus in one subject he describes the position of the apex as two and one-quarter inches to the left of the median line at its seven-inch point. The heart is usually injected from a carotid with a thin plaster mixture which should distend it moderately. The nipples are located according to the method just given, then cut through the middle and their positions marked. All soft parts down to the intercostals are taken away and the surface of bones and cartilages cleaned. "Now place a narrow tape-measure . . . from the supra-sternal notch, along the middle line to below the ensiform appendix. Upon each cartilage and rib indicate the distance in inches, measured transversely from the mid-sternal line, by narrow slips of paper as long as the cartilage or rib is wide and placed vertically upon the same to the number of four or five on either side of the middle line." These are to help in determining the position of the various ribs and cartilages. The camera is set vertically over the subject. A tube for inflation is put into the trachea. Two photographs are then taken, on Plates A 1 and 2, in expiration. The lungs are next inflated, and two views (B 1 and 2) are taken in inspiration. The air having been allowed to escape, the sternum is removed from the level of the lower edge of the first cartilage to that of the upper edge of the seventh. The cartilages and ribs are taken with it for

⁶ L'Anthropologie, 1893, tome iv, No. 4.

⁷ New York Medical Journal, 1893, vol. ii. (Vol. 58.)

a distance of four or five inches from the median line. The pleuræ are not opened. The lungs are again inflated to the same degree as before, and Plate B 1 is again exposed. The pleuræ are then removed, and Plate B 2 is again exposed. After the escape of the air, A 1 is exposed showing the state in expiration with pleuræ gone and pericardium remaining. The front of the latter is then removed, and A 2 exposed. We are not told whether the author then proceeds to combine the corresponding plates of different subjects, but from the illustrations we infer that this is not done.

As we have implied we think that a far larger series is needed before the results can be quoted. We will merely say now that Dr. Haynes finds the apex much nearer the median line than it is generally given. We would venture to suggest that in future observations it would be well to entirely ignore the nipples as landmarks, owing to the uncertainty of their position even in males.

REPRODUCTION OF THE UPPER AIR-PASSAGES BY PLATING CASTS, OBTAINED BY THE CORROSIVE METHOD.*

Dr. B. Alexander Randall strongly advocates this proceeding. The recommendation is by no means new to us, but it has great merits which make it desirable to discuss it. As Dr. Randall points out, a cast locks up a good deal of expensive fusible metal. Further, being of the nature of a negative in which cavities are represented by solids, it requires a certain amount of mental turning inside out, which is often confusing. This would be obviated by an electrotype plating, which has the further advantage of being fit to cut into slices, thus giving new and instructive views. A final point, which Dr. Randall does not mention, is that even in a few years fusible metal casts of such weight as those of the upper air-passages tend to become distorted. This is a very serious drawback. In our opinion metal casts should always be electrotyped when their nature admits of it.

THE RELATION OF THE HEPATIC ARTERY TO THE PORTAL VEIN.⁸

Dr. Retterer, finding discrepancies in the accounts of this point of anatomy, has studied it for himself. He finds that the hepatic artery must be divided into two parts. At the beginning of its course before it is in relation with the portal vein, it is in a posterior (more dorsal) plane. After reaching the vein it turns round it, lying anterior to it in the remainder of their course to the liver.

THE PTERYGO-SPINOUS LIGAMENT (OF CIVININI).¹⁰

This ligament, which is occasionally represented by bone, is of surgical importance in the operation of resecting the third division of the fifth pair of nerves, and we believe has already been referred to in these "Reports." In its simplest state it is a fibrous band passing from the external pterygoid plate to the spine of the sphenoid, and consequently a little external to the foramen ovale. The committee of collective investigation in Great Britain and Ireland have received 218 answers as to the ligament, and 104 as to its relation to nerves. The ligament is wanting, or merely represented by membrane, in about 20 per cent. of the

cases. It is a fibrous band in about 65 per cent. It is partly ossified in about 10 per cent., and completely so in about 3 per cent. The relation of the nerves does not appear to have been reported with many details by most of the observers. The inferior maxillary nerve, which the editors assume to include merely the inferior dental and lingual nerves, passed outside of the band in 92 instances, and below it in 12. The ascending branches naturally are in no immediate relation to it.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D. SECRETARY.

REGULAR Meeting, Monday, February 26, 1894, the President, Dr. C. F. FOLSOM, in the chair.

Dr. J. H. WRIGHT, by invitation, showed

CULTURES OF THE GONOCOCCUS FROM VARIOUS ORGANS.

Dr. W. T. COUNCILMAN showed a

SPECIMEN OF INTESTINAL OBSTRUCTION.

This specimen is interesting from the extraordinary manner in which the strangulation was produced. The symptoms came on suddenly, and the patient died sixteen hours afterward. The entire small intestine lies on this plate. At the lower portion of the plate there is a large mass of intestine, which is intensely congested and hæmorrhagic. The lumen was filled with almost pure blood. Thus the strangulated portion comprises about one-half of the small intestine. A portion of the mesentery attached to the strangulated intestine is also intensely congested, thickened and hæmorrhagic. A distinct band of constriction separates this portion of intestine from the other. Around this, what appeared to be a loop of intestine was wrapped. At first it was difficult to understand the condition. It seemed as though the strangulation was due to the mass of intestine having passed through a loop in the mesentery immediately beneath the intestine. On emptying the gut and examining the constricting band more closely, it was found to be the diverticulum of Mæckel which had become wrapped around the mesentery, with the end passed under, making a complete tie. I here reproduce the condition. Although intestinal strangulation due to Mæckel's diverticulum is not at all uncommon, it does not usually take place in this way. The end of the diverticulum may become attached to the peritoneum in various places, and through the loop so formed the intestine may pass. It is difficult to see just how the condition I show here could have arisen. The end of the diverticulum which had passed under the loop was greatly swollen, and this acted as a regular button, and could not return.

Dr. E. N. WHITTIER read a paper on

DIGESTIVE PARESIS.¹

Dr. E. G. CUTLER: I have nothing to add to what the reader has said. I can simply reiterate what he has so very well expressed, that I have been frequently disappointed in following out the carefully laid down

* The Journal of the American Medical Association, vol xxi, 1893.

⁸ Journal de l'Anatomie et de la Physiologie, 1893.

¹⁰ Journal of Anatomy and Physiology, October, 1893, vol. xxviii.

¹ See page 460 of the Journal.

rules and methods of treatment which have been proposed for the cure of diseases of the stomach and of the intestinal tract. I have tried to use drugs according to the methods of those people who have written on the subject of intestinal antiseptics, and have been quite disappointed at times in the results which I have obtained. I have been led at times to suppose it was some error of mine in the exhibition of these remedies. It is a pretty difficult subject, and I should say of the different cases which I have had under treatment, each one was a case in a category of its own; there were no cases which could be grouped except in a very coarse way. It is an interesting subject, and apparently the success which most of us obtain in the treatment of these diseases is not very great. I see quite a number of patients who have been through the hands of others, and I see others treating quite a number of cases that have been through my hands, so that I think we are all considerably disappointed in the use of many of these remedies which the doctor has spoken of. It seems as if something might be got from the laboratory study of excreta. Comparatively little is known of the feces. I have had occasion recently to see that in having some examinations made at the different laboratories. The chemists do not seem to be able to furnish us very much that is of practical use here. The same thing is true to a less extent of the bacteriologists. There appears to be a good deal of work yet to be done.

DR. H. F. VICKERY: The paper brought a remark of Ewald's to my mind; at least, he is quoted as having said that after the most careful study of the mechanical and chemical conditions of digestion, there is beyond it all a certain organic influence which escapes him and makes the problem almost too difficult to set down in definite language with a definite answer. The late Dr. Flint somewhere has said that he never knew anybody who followed an exact dietary who was not a dyspeptic. The influence of the mental state upon a person in these conditions is certainly very great; the same person, everything else the same except good fortune or bad fortune, one time will be comfortable in his digestion, another time not. Some of the greatest sufferers from the functional kind of dyspepsia look so very well that they again suggest that there is an organic or nervous element very strong in the causation of the disease, and which we have got to play upon in the cure of it. I share the doubts that have been forced upon others by their efforts to use antiseptics. If I understand the physiologists, the bacteria are necessary for the digestion of meat, so that if we made the intestine perfectly free from bacteria we might be worse off than we are now. I think that washing out the stomach in certain cases acts as an aseptic process, lessening fermentation not merely by emptying out a load of material, but by getting rid of a lot of germs which poison whatever food is taken.

DR. J. G. MUMFORD read a paper entitled,

COMPOUND FRACTURES.²

DR. A. T. CABOT: I think we are all very much indebted to Dr. Mumford for his very careful presentation of the subject, and the enormous amount of work he has done in bringing it into shape to give such exact results. In comparing the cases he has worked over with cases at large, I think we must remember that most of these hospital patients are dirty people

who have been injured at a time when the limb was not prepared for a compound injury, and consequently, a good many of these injuries reach the hospital with bacteria already planted in the culture media supplied. I should think, as I was able to gather from his statistics, that the number of cases of suppuration about corresponded with what one would expect from sepsis occurring before the patients reached the hospital.

There is no question that a considerable amount of dirt may be introduced into a wound, and, under favorable conditions, the micro-organisms so introduced may be afterwards made inert and destroyed by the action of the tissues. I think that this power of the tissues to destroy the bacteria introduced is one reason why wounds that are closed up tightly do so much better than those that are treated by putting in extensive drainage, as in the previous plan of treatment. In old times, a leg coming in with fractured tibia, and with tissues extensively lacerated, was laid freely open and riddled with drainage-tubes in every direction. The result was that large openings were made, through which micro-organisms could enter, and the irritation of the tubes led to the formation of fluids, in which any organisms so entering, or which had been introduced at the time of the injury, could grow and propagate.

I think that in the treatment of these cases there is no question that the careful irrigation, washing out of the grosser material, dirt, etc., that has been introduced is extremely important. It is not probable, however, that washing out ever entirely removes all the micro-organisms that have been introduced, and it is probable that their final destruction is wrought by the tissues themselves in the way I have indicated. It seems to me that these cases, particularly those compound fractures in which joints are implicated, really show the most triumphant results from aseptic and antiseptic surgery that we now see. A little impurity introduced into the comparatively non-vascular cavity of a joint has much less chance of being properly removed by the action of the tissues than has an equal amount of septic material when introduced into the peritoneal cavity. In old times, we used to regard an abdominal operation as the acme of aseptic or antiseptic achievement. I think, however, that these joint cases are much more striking, and are better tests of the thoroughness of the asepsis. In view of that fact, it seems to me that a joint that has suffered a compound fracture, and in which mobility has been preserved by aseptic treatment, is really one of the greatest triumphs of aseptic surgery. I confess that I was surprised at Dr. Mumford's statement of the number of such movable joints obtained. I had not supposed we were doing as good work as that. When we consider the mechanics of the elbow-joint, and think that a moderate amount of inflammation would fasten those intricate joint surfaces together so that they would not afterwards move on each other, I think these results are remarkable.

Lastly, in regard to the methods of putting up these fractures. Of course, the main principles which are to be observed are these: thorough cleanliness, asepsis as far as can be obtained, and immobility. It does not very much matter in what way the immobility is obtained, provided it is complete, or approximately so. In the case where we operate and make antiseptically a compound fracture, as by section of a bone, we are perfectly sure from the start that we have not intro-

² See page 465 of the Journal.

duced organisms, at least, have taken every precaution against it, and we can use fixation with plaster, expecting not to remove that dressing until union of the bone has been pretty thoroughly established. In these cases, however, where the patients are brought in with a dirty leg or dirty arm with a compound fracture in it, and where there is a very strong chance of suppuration, it seems to me that we expose our patient to some risk by closing in that wound, after making it aseptic as possible, by enclosing it in a stiff dressing. In cutting off a plaster bandage, there is a certain amount of motion, churning up of the fracture; and in putting on the next plaster that is to take the place of the one taken off, there is a certain amount more of churning up, and to avoid that, I think fixation splints have their advantage over the plaster. They enable you to watch the limb more carefully during that period during which there is fear that suppuration may establish itself.

DR. R. W. LOVETT: The only part of compound fractures that I am competent to discuss is the later history, which I see as an out-patient surgeon; and Dr. Mumford's paper makes plain what I had not realized so fully before, how long had been the immobilization of these patients before they were competent to come as out-patients and see about having the plaster removed. There are some points I have been interested in observing, and one is especially with regard to fractures of the leg in cases where the joint has not been involved. After weeks and months of immobilization the joint is almost always stiff, and it has been perfectly well demonstrated by experimental work, especially by Dr. Phelps, of New York, that prolonged immobilization of the healthy joint did not result in ankylosis except in the case of very old persons or persons markedly rheumatic; that seems to be perfectly well borne out by the cases one sees coming to the out-patient department, and motion slowly comes back in these joints that have been fixed so long by the use of hot water and massage. If the foot has not been put in a proper position at the time of the injury, and is not fixed in the position of a perfect right angle, the strain on the tendo-Achillis is felt at once on beginning to walk, and I am sure that the period of disability is very much prolonged by the slightest dropping of the toe. Another point that comes up, is with regard to the swelling and the disturbance of the circulation in these legs that have been so long immobilized. Some years ago I went to Dr. Warren and got the literature there was with regard to it, and found it was a subject on which there had been very little formulated and about which very little was known. Dr. Edward Reynolds and I got some dogs and went to the Medical School for the purpose of doing some experimental work on the subject. The legs of the dogs were broken, but we found it impossible to reproduce the swelling. We immobilized them for long periods, but we could not get reproduction of the swelling. The disturbance of circulation, the coldness and blueness that follow removal of the plaster in some of these compound fractures of the leg and the tremendous swelling and infiltration that follows in some cases is a pretty serious problem. In some of the cases it has not seemed to yield to anything; in other cases it was benefited by massage or hot water and in the majority of cases it wears off slowly. I think the causation of the swelling is a matter about which practically nothing is known. In some cases which have been fixed

for months there is comparatively little of it, but it forms a most troublesome and obstinate complication that is to be dealt with in the later stages of these long continued fractures.

Then another point is with regard to the breaking down of the arch that follows the long immobilization of the leg. I fancy it is due to the same set of phenomena that cause the swelling and disturbance of the circulation, but after months of fixation in the plaster bandage and after the stiffness of the ankle has been disposed of, there begins to be felt in a large number of cases, a pain which indicates that the arch of the foot has given way, and one can notice in looking at the foot that it is somewhat pronated and that the weight does not come down through the foot but inside of it. In these cases relief is almost always given by the application of a felt pad to support the arch of the foot, a couple of layers of felt are cut so as to fit into the hollow of the foot and support the arch and are applied outside of the stockings. This seems to be so much the case that in my last service at the out-patient department all cases of fracture, simple and compound, when the splint was removed, were dressed at first with a bandage and felt pad under the foot to support the arch. The results were satisfactory as far as they went. It seemed as if the people regained the power of walking with less discomfort and disability than when they were left to walk directly on the foot. The impressions of these feet carried out this idea that the arch was broken down. A permanent flat-foot had resulted in a certain number of cases of fractures done in previous years where they came to apply for relief from flat-foot.

DR. J. E. GOLDTHWAIT: I fear that what I have to say will be rather out of place in this discussion, as Dr. Mumford has carefully avoided the subject of the direct fixation of the fragments; nevertheless, as the specimens have been prepared and as they have to do with the treatment of compound fractures, it seems to me that I am justified in presenting them. I wish to say, at first, that the suggestions which I have to make, are simply the result of some experimental work, and that as yet they are simply experimental and theoretical, not having been used upon any patient. I would also say, that I do not advocate this line of treatment for every case of compound fracture, but only for those very severe fractures with laceration of the soft parts, in which the immobilization of the fragments in the correct position is so difficult. The class of cases for which the various forms of wire suture have been devised, and also for which Langenbeck, Volkmann and others have devised and used the different osseous splints.

A year ago Dr. Senn, in his address before the American Surgical Association, described a method in which he used ferrules of bone for this purpose, they being slipped on over the ends of the broken bone. The difficulties with this method were the making and fitting the ferrule, and that later on it was necessary to remove this ferrule by a second operation.

With the hope of finding some absorbable substance, that at the same time could be easily and quickly applied, I have been experimenting for some time, and of the various materials used decalcified bone has proved to be the best; and in pieces two or three inches long and one-eighth of an inch square is quite firm enough for the purpose. Several of these pieces can be used, being applied as coaptation splints and these

held in place by silkworm-gut ligatures. Another way which accomplishes the same result, is to use a segment of the shaft of a bone about two inches long split longitudinally. This makes a trough into which, after it is decalcified, the fragments of the bone rest, while along the upper surface one of the small decalcified splints, before described, is applied, and the whole held in place by the silkworm-gut ligatures.

All of the material used is absorbable, so that a secondary operation for its removal would not be necessary; the splints do not require much fitting; and they can be prepared and kept for use the same as ligatures, and other surgical supplies.

DR. CABOT: In regard to the method of fixation of the ends, which was not discussed in the paper but which I think is important, the difficulty has always seemed to me with those complicated methods proposed by Senn and others that they necessitate too extensive an injury of the soft parts. I have always tried to keep the soft parts not separated from the bone, and it seems to me any method which requires for its proper performance a separation of the soft parts from those ends which are going to unite, is in that degree faulty. I am interested in what Dr. Goldthwait has said about using silkworm-gut for tying around these splints. Lately, since I have used the silkworm-gut more and more, I have firmly convinced myself that it is quite strong enough for the ordinary suturing of bone, and I question whether a few silkworm-gut sutures between the fractured ends of the bones, would not accomplish as much fixation as is ordinarily necessary and with a less introduction of foreign material than in any of the more complicated methods.

DR. GOLDTHWAIT: From what little experience I have had, I should quite agree with Dr. Cabot in his hesitating to strip the bones of the soft parts, and also that in the cases in which wire can be used, I should think the silkworm-gut would be sufficient, but there are a certain number of cases in which, as the result of a severe crush or twist, the soft parts are lacerated and torn from the fragments, making it very difficult to maintain the correct apposition. Also the bone at times is so finely comminuted and the edges so ragged that it is difficult to pass a silver-wire or any suture directly through the bone so as to hold them in place. It was for this small class of cases that I suggested this mode of treatment. In exposing the bone to apply the suture, if it is necessary to free any of the soft parts, by all means do not disturb the periosteum. If you notice in the illustrations passed around, the splints raise the sutures so that the intervening space between the splints is free, and no pressure is brought upon the periosteum in these places so that the circulation is not disturbed.

Recent Literature.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry and Physics in the Medical Department, University of the City of New York, etc. Third edition. New York: William Wood & Co. 1893.

This book, which has been prepared solely for laboratory use, contains the work which is followed by the junior students in the Medical Department of the University of New York. It is, we presume, primarily

intended as an aid to the author's own classes, and is well adapted for that purpose. We can recommend it as a useful laboratory guide. In this edition a system of qualitative analysis not contained in the earlier editions has been added.

Hernia: Its Palliative and Radical Treatment in Adults, Children and Infants. By THOMAS H. MANLEY, A.M., M.D., Visiting Surgeon to Fordham Hospital; Member of New York Academy of Medicine, American Medical Association, New York State and County Associations, International Medical Congress, Pathological Society, National Association of Railway Surgeons, etc. Philadelphia: The Medical Press Co., Limited.

This book presents the subject of hernia, and tries to accord "to each therapeutic resource its due merit, and to strive to indicate the precise limitations of each." In these days we can hardly glance at a journal, but what a new operation for the radical cure of hernia is brought forward. In this state of unrest, it would be difficult to have any book thoroughly up to date. Dr. Manley has succeeded, however, in incorporating in his book most of the recognized operations. The reader is never left in doubt as to the value of a proposed operation, for the author states clearly his belief in the different measures presented. There is at times obscurity in the author's writing; as for instance, on page 13, the following paragraph occurs:

"The change in the pelvic lines, curves and angles, and the transmutation of tissue; the widening lumina of the emunctory canals, in obedience to the incessant, though intermittent movements of their contents, each and all contribute their share towards effecting a symmetry of perfection and the firm closure of the inguinal femoral and umbilical portals."

The binding is fair, the cuts are indifferent, and the printing is bad.

Marinesanitätsordnung. Band I, *am Lande*; Band II, *Beilagen*; Band III, *am Bord*. Berlin: E. S. Mittler & Sohn. 1893.

These three volumes contain the official sanitary regulations, blank forms and other material relating to the Naval and Marine Service of the German Government.

Volume I contains the regulations to be observed in hospitals, stations and all places on shore.

Volume II contains the blank forms which accompany the regulations published in Volume I. They are eighty-five in number, and contain very minute details relating to the management of the hospitals, supplies, food, medicine, baths, heating, lighting, vaccination, and everything relating to the care of the sick.

Volume III contains, first, the regulations pertaining to the care of the sick at sea; and, second, the health regulations of ships, including the ventilation, food-supply, water-supply, clothing, prevention of infectious diseases, poisons and methods of disinfection.

The Year-Book of Treatment for 1894. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1894.

This book has been compiled, on the whole, with excellent judgment, and, being in its tenth year, is already well known. It presents to the profession in a convenient form a brief summary of the ways proposed during the year for treating a great variety of diseases. Practitioners will find it a useful book.

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THE BRANDT METHOD OF PELVIC MASSAGE.

It is rather extraordinary that the author of a method of treatment so peculiar in its character, and intended for the cure of diseases of the female pelvic organs should be a layman. This fact undoubtedly delayed its professional recognition, but now, largely through German physicians who have studied it with Brandt, its claims have become known to the profession at large. These claims are not that his method is a universal remedy for the diseases of women, but that very many of the chronic pathological conditions which are the result of inflammations of the genital tract, and some of the functional disturbances, especially of menstruation, are favorably influenced by this method of treatment. He also claims that displacements of the uterus are permanently cured by the appropriate manipulations, prolapsus uteri of all degrees being no exception to the rule.

There seems no doubt that Brandt can substantiate these claims, and from the reports which a few other operators have made of their results it seems possible for others to accomplish as much.

In estimating the value, however, of any method of treatment, especially one which is recommended for so large a proportion of what may be called minor gynecological affections, two or three considerations must be borne in mind.

In the first place, it must be easy of application and demand no more than the ordinary skill of the average physician. In the second place, it must be as regards expenditure of time and expense on the part of the patient and in permanency of results a marked advance over other methods. And third, it must be free from all objectionable features.

A somewhat careful study of what has been written on the subject forces us to the belief that the method of pelvic massage under discussion does not fulfil any of these prerequisites.

As regards the first, it is conceded even by its warmest advocates that it is well-nigh impossible to so de-

scribe the technique in print that a physician can appropriate and make use of it. Personal instruction and long practice seem to be a necessity, and even then so much delicacy of touch and manipulative skill are required that few could become proficient. These facts alone would prevent its widespread application.

As regards the second point, the length of time required, and the permanency of results, two very important factors in comparing it with other methods, we are forced to the conclusion that even in these respects its claims for recognition cannot be substantiated. We think other forms of treatment would accomplish equally good results in a shorter time. Dr. Matilda Wallin, who for three years was Brandt's pupil and assistant, in a late communication on this subject before the Philadelphia County Medical Society, describes the method in considerable detail, and refers to a case of complete prolapsus uteri, which she saw treated. The patient came to Brandt the 29th of June; on the 9th of September she was well. Who will doubt that with appropriate operative treatment the patient would have got well sooner? Much more would this be true of the numerous minor ailments.

The third point mentioned raises a question which must, it seems to us, suggest itself when this method of treatment is advocated, namely, the effect of this more or less prolonged manipulation of the vagina upon nervous and excitable women. In our opinion it cannot fail to be prejudicial, and in so far nullify any good effect that the massage would otherwise have.

The objections, therefore, which we would feel are valid against the widespread adoption of this method of treatment, are that it is complicated, slower in its action, and not surer in its results than other methods, and has possible objectionable features.

At the same time, we confess that in a modified form and as an adjunct to other modes of treatment, massage is valuable in pelvic disease. It is not the principle, but the elaborate system which seeks too wide a field and attempts too much that we object to. Any method which claims as much as this does must lie within the possibilities of at least all specialists. As it is, its practice will certainly be confined to the favored few who can enjoy special training, and who will make a sub-specialty of it.

TREATMENT OF DIPHTHERIA BY FREQUENT SMALL DOSES OF BINIODIDE OF MERCURY.

PIÉDALLU¹ claims extraordinary success in treating diphtheria by small doses of biniodide of mercury. He has employed this remedy since early in 1891 in very many cases, to the exclusion of the usual local treatment, and without a single death. His formula is as follows:

R. Syrup	1000.00
Iodide of potassium	50.00
Biniodide of mercury	0.50 M.

The dose of this syrup for a young child is a teaspoonful every two hours. The dose would be about

¹ Bull. et Mém. de la Soc. de Thérapeutique, Avril 6, 1894.

one-thirtieth of a grain of the biniodide and about three grains of iodide of potassium. This may seem to the uninitiated rather large dosing, but Piédallu affirms that to obtain the really specific local and constitutional effects of these drugs (a share in which certainly belongs to the iodide of potassium), really heroic doses are required. He has given as much as 300 grammes of this syrup in the course of a week to children from four to six years old. At the end of several hours, eliminated by the mucous membranes, that is to say, the signs of iodism appear: coryza, salivation, etc., and the spittle flows from the child's mouth; then the dose is diminished, enough being still given to keep up the effect. The object of the treatment, in the words of the writer, is "to maintain in the mouth and pharynx a permanent antiseptic gargarism." He advises in case the false membranes are loose, to detach them gently with a spoon-handle, then to touch the denuded surface with a swab dipped in bichloride solution, 1 to 1,000; this may be done two or three times a day.

Piédallu remarks that it is not until the end of forty-eight hours that this treatment shows its curative effect. The false membranes no longer spread, but begin to fall off in a pultaceous mass. In certain rebellious cases, the amelioration does not show itself until the fourth or fifth day, but the remedy must be continued fearlessly, and in doses proportioned to the gravity of the malady.

This treatment is very well borne by children, and is very exceptionally attended with colic, vomiting, or stomatitis. It is well to conjoin with it a rigorous milk diet to ensure activity of the renal function, but when the child desires to eat, light food may be allowed.

Piédallu urges the profession to try this method which he says has given him uninterrupted success for three years. He claims that the mercury and iodide of potassium in being eliminated by the mucous membranes of the upper respiratory passages, constantly oppose their antiseptic action to the specific bacilli, and thus make their habitat unpropitious. Certainly, this kind of treatment is more easily carried out than the local treatment by spraying, irrigation and swabbing.

It will be remembered that when pilocarpine was first recommended for internal treatment in diphtheria, some such action as that above described was claimed for it, but the result of treatment by pilocarpine and by jaborandi was only failure and disappointment.

At the meeting of the Therapeutical Society, there was some discussion of the above mentioned mode of treatment. One of the speakers (Barbier) said that experiments made in Germany and Switzerland demonstrated the bactericidal value of biniodide of mercury and iodide of potassium. As these drugs are eliminated by the mucous membranes, the formula of M. Piédallu appeared to be rational. M. Crequy thought the doses rather large for children, but Guelpa affirmed that children support mercury better than adults.

Others expressed their desire to test the treatment indicated by M. Piédallu, but affirmed their disbelief that any really specific treatment of diphtheria had yet been found.

SCALING THE APPROPRIATION FOR THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE.

THE appropriation for the Library of the Surgeon-General's Office at Washington has been cut down in the House of Representatives from \$10,000 to \$7,000. An effort will be made to have the amount restored to the old figure in the Senate. The petty economies practised by Congress in this and similar matters are as exasperating as are the gross extravagances in other directions where it is supposed votes may be made.

Remonstrances against the action of the House are making themselves heard from many parts of the country. The following resolutions adopted by the Academy of Medicine of Cincinnati express a very general feeling in the Medical Profession:

Whereas, the Library of the Surgeon-General's Office in Washington is of the greatest importance to medical education and to the medical profession throughout the entire country, it is for the public good that it should receive the liberal support of the Government;

Resolved, That the Academy of Medicine desire to enter their earnest protest against the reduction of the appropriation for its annual support from \$10,000 to \$7,000;

Resolved, That the Academy of Medicine urge most strongly the restoration of the former annual appropriation of \$10,000, under which it has become one of the largest and best appointed medical libraries in the world, and without which its continued growth would be seriously crippled.

A similar memorial to the United States Senate is being circulated and receiving representative signatures among the profession in Boston and its neighborhood. With \$7,000 it is impossible to procure even all the current literature.

MEDICAL NOTES.

CREMATIONS IN FRANCE.—There were one thousand and five cremations in France during the first three months of the present year, which is one-third more than a year ago.

PROFESSOR RUBNER TO SUCCEED HIRSCH.—Professor Rubner has been chosen to succeed the late Professor August Hirsch in the Chair of the History of Medicine in the University of Berlin.

A BEQUEST TO THE ELIZABETH HOSPITAL.—The sum of \$25,000 has been given to the Elizabeth, New Jersey, Hospital by some one in New York who formerly lived in Elizabeth, on condition that his name shall not be made public.

BILLROTH'S SUCCESSOR.—Dr. Victor Ritter von Hacker, head of the Second Surgical Clinic at Vienna, has been unanimously recommended by the Professorial College to succeed the late Professor Billroth in the Chair of Surgery in the University of Vienna.

PROFESSOR THOMA. — Dr. Richard Thoma, professor of pathology at the University Jurjew, Dorpat, has moved to Magdeburg to take charge of the general hospital in that city. On his departure from Dorpat he was escorted to the station by his colleagues and a large company of students.

ACQUA DI PERUGIA. — The preparation of that charming old poison known as *Acqua di Perugia* was not so difficult or mysterious as has been supposed. It can easily be made, according to a recent writer, by killing a pig, cutting it up, and salting it down with arsenic. After being cooked the gravy from such a dish is even more fatal a poison than the unserrified metal.

A POPULAR SURGICAL CONSULTANT. — Professor von Bergmann, of Berlin, was recently called to Nikolajew to amputate the foot of an eighty-two-year-old millionaire. It became rumored in the town that the great surgeon would also see other patients in consultation during his short stay, and the crowd of carriages about the door of his hotel became so great that the police were obliged to keep a squad of men on duty to keep the approach from being blocked.

A FATAL LUNCHEON. — The *Lancet* reports the following almost incredible luncheon eaten by an English lad of fifteen years: thirty oranges, an entire cocoanut, cider, a mince-pie, mineral-water champagne, tea, cake and lemonade. Immediately after this feast the boy died of cerebral apoplexy; and the *Lancet* remarks, "altogether the narrative is a melancholy and humiliating reminder that pleasure, above all things, can only be enjoyed in moderation and is poisonous in excess."

THE FATALITY OF SUCCESS. — The *Calcutta Medical Reporter* relates a curious instance of the fatal effects of "continuous performances" with poisonous drugs. A fakir at a fair was accustomed to attract spectators by eating shavings, glass, soap and such dainty dishes, and at last added matches to his diet. As trade was dull at first, he did himself no harm; but his popularity increasing, he was obliged to give some thirty performances a day, and in the glow of his success he died of phosphorus-poisoning.

ADMISSION REQUIREMENTS TO ILLINOIS MEDICAL COLLEGES. — The Illinois State Board of Health has revised the regulations concerning admission to medical schools in that State by depriving the various faculties of the control of entrance examinations in elementary studies, and requiring in place of such examination, a certificate of graduation from a college, a high school, or a certificate from a second-grade teacher. Entrance examination must indeed have been lax when so generous a change raises the standard.

ONE DIFFICULTY IN THE WAY OF AN INTERNATIONAL MEDICAL LANGUAGE. — In a recent discussion at the New York Academy of Medicine upon the possibility of adopting Greek as an international language for scientific purposes, Dr Roosa said that if we were to have an international language, it could only

be by a revolution of teaching methods, and he despaired of such a revolution because the hide-bound notions of college professors were simply beyond any ordinary assault. For a man from New York to talk to men from Cambridge or New Haven as to ways of teaching would be very much as if he should go to the tomb of the Prophet with his boots on.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, May 9, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 36, scarlet fever 38, measles 31, typhoid fever 13. There were no new cases of small-pox, nor any deaths, during the week. There are now 9 cases of small-pox in the hospital. During the week the State Board of Health received reports of the following cases of small-pox: Natick 1, Worcester 2.

AN AGED PAIR OF TWINS. — There are living in Peterboro, N. H., two maiden sisters who claim, with not improbable justice, to be the oldest twins in the country, as they are over eighty-three years old.

HARVARD MEDICAL SCHOOL. — The course of evening lectures to graduates ended with the lecture given on Wednesday, May 2d. A similar course will be announced for the winter of 1894-5.

A MEDICAL MAGAZINE AT YALE. — A new medical journal will be published next month by the students of the Yale Medical School. It is proposed to have contributions from physicians in Connecticut and New York in addition to work of the students.

THE MASSACHUSETTS STATE BOARD OF HEALTH AND THE PREVENTION OF CONSUMPTION. — The Massachusetts State Board of Health has issued an extended circular on the prevention of consumption in which it suggests that much good might be done if local boards of health would issue a simple notice like the following:

"Consumption is the most destructive disease of New England, the number of persons dying annually from this cause in Massachusetts amounting to nearly six thousand.

"The disease is infectious, and can be communicated from one person to another. The chief danger exists in the expectoration of the sick, and if this expectoration is carefully destroyed little danger need be feared.

"Consumptives should be instructed not to spit upon the floors of rooms, public halls, street and railway cars, and other vehicles, nor in the streets, but into pieces of cloth, or receptacles made for the purpose, containing water, or a saturated solution of carbolic acid (one part of carbolic acid crystals to about fifteen parts of water). Such bits of cloth should be destroyed by fire, before the sputa becomes dry, and other receptacles should be cleansed with scalding water, their contents having been destroyed or otherwise carefully disposed of. Handkerchiefs which may have been used from necessity should be boiled half an hour before washing.

"A healthy person should not sleep in the same room with a consumptive.

"Remember that sputa must never be allowed to become dry."

BOSTON CITY HOSPITAL HOUSE-OFFICERS. — Under the present new regulations of the Boston City Hospital, graduates in medicine of less than three years'

standing as well as undergraduates who have completed three full years of study are eligible as candidates for appointment as house-officers.

NORFOLK DISTRICT MEDICAL SOCIETY.—At the annual meeting of the Norfolk District Medical Society held May 8th, the following officers were elected for the coming year: President, D. D. Gilbert, Dorchester. Vice-President, Robert T. Edes, Jamaica Plain. Secretary and Librarian, James C. D. Pigeon, Roxbury. Treasurer, Edw. G. Morse, Roxbury. Commissioner of Trials, Benjamin E. Cotting, Roxbury. Nominating Councillor, O. F. Rogers, Dorchester. Censors, B. S. Blanchard, Brookline; D. G. Eldredge, Dorchester; H. M. Cutts, Brookline; E. B. Lane, Dorchester; C. W. Sparhawk, West Roxbury.

CONNECTICUT RIVER VALLEY MEDICAL ASSOCIATION.—At the Annual Meeting of the Connecticut River Valley Medical Association, held at Bellows Falls, Vt., May 1st, the following officers were elected for the ensuing year: President, Dr. W. L. Havens, Chester, Vt.; Vice-President, Dr. D. Goodenow, Alstead, N. H.; Treasurer, Dr. E. R. Campbell, Bellows Falls, Vt.; Secretary, Dr. J. Sutcliffe Hill, Bellows Falls, Vt. Delegates to American Medical Association, Drs. Holton, Campbell, Ray, Richardson, Pettengill, Havens, Gleason, Dinsmoor, Prouty and Hill. Delegates to State Societies, Dr. Taylor, to Vermont; Dr. Miner, to New Hampshire; Dr. Staples, to Massachusetts; Dr. Page, to Connecticut.

NEW YORK.

REPORT ON THE BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.—At a meeting of the Board of Health held May 1st, Dr. H. M. Biggs submitted a report on the bacteriological examination of 286 cases reported as membranous croup, made within the past ten months. 229 of these were proved to be true diphtheria by the existence of the Klebs-Löffler bacillus; or about 80 per cent. Six per cent. of the remaining cases were of doubtful character, and the other 14 per cent. were clearly not true diphtheria. The result of his investigations led Dr. Biggs to recommend that so-called membranous croup should be included by the Board of Health in the list of contagious diseases.

THE DEATH OF A CHOLERA QUARANTINE NURSE.—On May 1st there died at Bellevue Hospital a woman whose heroic devotion to duty under the most trying circumstances deserves to be held in remembrance. This was Miss Juliet Henshaw, a professional trained nurse, who was the first one to volunteer in response to the call of Health Officer Jenkins for nurses for the cholera patients on Swinburne Island in the summer of 1892. The number of nurses was very small, but she was so indefatigable in her work of caring for the sick that the percentage of mortality was remarkably low. She won the intense admiration of the physicians in charge by her self-sacrifice and skill; and when her health began to suffer from the strain upon her she was urged to give up her position. She insisted, however, upon remaining at the post of duty

until the disease disappeared. After the cholera outbreak Dr. Jenkins kept her in his employ, and she remained in the service until the latter part of April, when she became seriously ill. She was then transferred to Bellevue Hospital. During the attack from which she suffered the symptoms strongly resembled those of typhus fever, but the autopsy showed that the cause of death was acute yellow atrophy of the liver.

THE "CRAIG" STATE COLONY FOR EPILEPTICS.—The Governor has signed the bill introduced into the Legislature by Hamilton Fish, providing for the establishment of a State Colony for Epileptics, which passed the Assembly by a vote of 96 to 4, and the Senate unanimously. The colony is to be known as the Craig Colony, "in honor of the late Oscar Craig, of Rochester, whose efficient and gratuitous public services in behalf of epileptics and other dependent unfortunates the State desires to commemorate." The statute provides for the purchase by the State of the property heretofore owned by the Shakers, situated near Mount Morris, Livingston County. It includes 1,800 acres of land in one of the finest locations of the Genesee Valley, and the soil is well adapted for farming and horticultural purposes. The supply of water is abundant, the property being divided into two parts by the Cashauqua Creek, which flows through the land in a deep gorge, with a fall of one hundred feet, affording a perfect natural barrier for the separation of the sexes. The Shakers have erected upon the property two groups of buildings, valued at \$75,000, suited to all the purposes of the contemplated colony, which, with slight alterations, will accommodate at least three hundred patients. Indigent epileptics will be received and cared for by the State, but the colony is expected, when fully established, to be nearly self-supporting. There are now more than six hundred epileptics in the poor-houses and almshouses throughout the State.

Miscellany.

THE EFFECT OF ETHER AND CHLOROFORM ON THE KIDNEYS.¹

WUNDERLICH, after the examination of the urine in 125 cases, before and after anæsthesia, draws the following conclusions as to the effect of ether and chloroform narcosis on the kidneys:

(1) An already existing albuminuria is often increased by etherization. No such case in which chloroform was given was observed.

(2) Albuminuria can be caused by narcotization with chloroform and ether, more often with chloroform, the relative frequency with which it occurs after the use of chloroform and ether being 11.5 to 6.9.

(3) As a result of the use of chloroform, casts may appear in the urine. This is less frequent after the use of ether. The relation of frequency is 34.8 to 24.6.

(4) When casts are already present, both anæsthetics have the effect of increasing the number.

¹ Beiträge zur Klin. Chirurgie, Bd. XI, Hft. 2, 1894; Annals of Surgery, May, 1894.

INFANTRY FOOTWEAR.

In spite of all the changes in the tactics of modern warfare, the greater use of artillery in mass and at long range, and the more facile means of transportation of troops, one of the most important elements in the success of an army, and perhaps the prime factor in determining its real value, is the marching power of its infantry, whether for long distance or quick strategic movements. In maintaining this superiority, the chief reliance must be placed, not on the strength, courage or rations of the men, but on the condition of their feet; not on the character of their patriotism, but of their boots. Napoleon appreciated this, and hanged a contractor who stuffed the soles of his shoes; and Wellington is said to have enumerated the three most essential articles of a soldier's equipment as, first, a pair of good shoes; second, another pair of good shoes; third, a pair of half-soles.

Lieut. N. P. Phister of the First United States Infantry calls attention to the general neglect of this important matter¹ in our army. During his observations he has marched about two thousand miles, and has "seen about five per cent. of a regiment of three hundred men disabled for hard marching by sore feet, in a march of ninety miles over good roads, going at the rate of about twelve miles a day; and as a contrast, one company of the eight went through without a sore foot in the entire company, simply because the captain had looked carefully to his men's shoes, and had each man prepared with well-broken, well-greased shoes of proper size. It was not required that the men of this company should wear the issued shoes, but no shoe might be worn without the captain's approval."

The five essentials, each of equal importance for infantry footwear, to give increased efficiency in marching power are: (1) Protection from wear; (2) freedom of action for the foot; (3) lightness; (4) flexibility of the shoe; (5) fit. The first requirement is at present about the only one regarded, and that in a manner which is false economy, and is closely related to the other requirements of freedom for the foot and flexibility. Mere thickness of the leather is no criterion of its wearing power if the skin has no pliability or is poorly tanned.

"Cold-tanned oak sole-leather of proper thickness, and well rolled, to make it compact, is pliable and tough, and, while it costs about one-third more, is well worth the difference." As the middle layer of the tanned hide is fibrous, it cannot be dressed, shaved or pressed to a permanently smooth surface, or one which will wear well, and therefore a piece of leather which has been split or skived down to a required thickness has been so treated at the expense of one of its wearing surfaces, and will not retain dressing, rapidly absorbs moisture, hardens and stiffens till it breaks. "Our soldiers have for years worn shoes from leather of this kind, fuzzy and cloth-like in appearance. The soldiers call them boiler-iron shoes, and they deserve the name."

As regards lightness, there is room for much improvement. The cavalry gives careful consideration to the weight of the horse-shoe. The weight given by experts as proper for a full set of shoes for a cavalry horse of medium size is forty-eight ounces. A pair of soldier's shoes, No. 8, of the latest infantry pattern, weighs forty ounces.

Far more care should be given to individual fit of the shoes. A foot is a foot, and a shoe a shoe—is not a reasonable, wise principle for the quartermaster's department to follow, and a shoe well made from the best material and fitted to the foot is a good economy, even if it cost more—\$4, instead of \$1.89, as at present.

"A cobbler's wagon is a necessity not always provided for. No forge, forge-wagon or battery is more so. Some arrangements for mending the shoes of the soldiers during campaign should always be made. A soldier can and frequently does fight in his shirt-sleeves and bare-headed, nor is his military efficiency impaired by a canvas patch on his trousers; but if his shoes give out or his feet get sore he will not be on hand to fight at all."

Correspondence.

PROPOSED LEGISLATION FOR THE BETTER PROTECTION OF THE COMMUNITY AGAINST QUACKERY.

NEWBURYPORT, May 5, 1894.

MR. EDITOR:—The bill¹ which has recently passed the Massachusetts Senate and will soon come before the Lower House is meeting with favor wherever the importance is recognized of any legislative interference with quackery in its manifold forms. It is a bill which will not offend the extremist advocate of the *laissez faire* doctrine of governmental function, because it does not oppose the right of individuals to employ Christian scientists, faith-curers, magnetic healers, clairvoyants, etc. (see Section II), if they wish, nor does it prevent the quack from responding to the demands of those who have faith in his methods; it simply takes from the latter—unless he has been in practice at least three years—his right to usurp a name and a title which he has not earned by long and laborious study and suitable experience. This bill recognizes the fact that the degree of M.D. cannot be assumed at will by individuals, but belongs to the graduates of legally chartered medical colleges and universities, having power to confer degrees given them by the Commonwealth, or to such as pass the examination of the Board appointed under this bill. It forbids individuals from advertising themselves as physicians and surgeons, using the letters M.D., or title of doctor ("meaning thereby doctor of medicine"), until they have been duly registered, the qualification of registration being the possession of a diploma from a legally chartered medical school, or in default of this, the passing of an examination before a Board appointed by the governor.

The proposed bill cannot be regarded as a bill to suppress quackery, however it may have been misrepresented by its enemies, who say that it is at least "an entering wedge." The suppression of quackery by legislation is something that has never been accomplished since the world began. Considering the fate of previous attempts in this State to obtain medical legislation, it is not probable that for some time any more stringent bill will pass the Committee-room.

Such legislation should always be regarded as primarily and especially intended for the protection of the people, not for the principal benefit of medical men. The Supreme Courts of several States have declared that laws regulating the practice of medicine and surgery are constitutional and valid, being for the promotion of the safety and well being of the community. This decision not only has been rendered by the Supreme Courts of Minnesota, Illinois and New York when confronted by test cases, but the Supreme Court of the United States has affirmed the right of State Boards of Health and State Governments to make rules for the regulation of the practice of medicine.

¹ Journal of the Military Service Institution, May, 1894.

¹ Boston Medical and Surgical Journal April 26, 1894, page 36.

It is true that many of our foremost physicians look with indifference if not with positive disfavor upon all such laws; chiefly for the reason that it seems to be impossible to obtain such legislation unless physicians demand it and work to obtain it. There is this hardship, that physicians cannot ask for such legislation for the benefit of the public without seeming to ask for it from a mere selfish motive. It has always, moreover, been the case that in States and countries where stringent laws regulating the practice of medicine have existed, physicians have been obliged to enforce them, often at the cost of much opprobrium and pecuniary sacrifice, or else the laws have been a dead letter on the statute book. This is the reason why many excellent men in the profession are indifferent; they acknowledge that such legislation would be just and may even be demanded, but they do not desire to be placed in the attitude of seeming to make requests for legislative enactments to benefit themselves. "If," they rightly say, "the medical profession cannot stand on its own merits, it has no claim whatever even to ordinary respect." They recognize the fact that one part of their duty is to protect the people from quackery, but they deprecate doing this by methods which will certainly lead to a misinterpretation of motive.

A writer in the *Medical Record*, disgusted with the working of the law in New York, has well emphasized this point of view: "Practically speaking," he says, "the people are not prepared to appreciate our motives, and will never be till they are sufficiently educated to draw the line between quackery and legitimate medicine. [Alas, if we must fold our hands until then, we shall have to wait until their spiritual leaders cease to give certificates endorsing quackery!] When that time comes, there will be no difficulty in having suitable laws passed, and the people will themselves take the proper steps to punish any offenders. [In such a time there will be few quacks to punish, culture soil will be unpropitious.] If we must legislate at all, let it be in the direction of improving ourselves. There is a great deal that may be done in this direction. Our college regulations can be made more stringent, our standard of preliminary requirements raised, our terms of study extended, and, in fact, the whole system of medical education can be elevated. By limiting our efforts to such reforms we can at least prevent quacks and incompetent persons from coming into our ranks, and this will be a benefit and a blessing to society."

E. P. H.

THE PRODUCTION OF VACCINE VIRUS.

ROXBURY, May 5, 1894.

MR. EDITOR:—Permit me to say a few words in regard to the Report under the above heading in last week's JOURNAL. As I supply a large number of the physicians and cities throughout the country with vaccine, the matter is of importance to me. The committee making the report did not come to me, nor visit my vaccine establishment, and the first intimation I had of any such committee was when I heard their report read at the Norfolk District Society. I was brought up from boyhood, by my father, in a most careful training and course of study regarding the whole subject of vaccination, and can fairly claim a very different familiarity with the whole matter than any of the other persons referred to in the report. The "Martin Establishment" referred to, was the old establishment at Brookline, which my brother carried on until his death. The committee obtained their information there from a former employee of my brother, who was not a physician.

Neither my father nor myself would ever countenance anything but the most scrupulous care in every detail in the management of vaccine production, and the reputation our virus has enjoyed uninterruptedly for twenty-five years, shows what that care has been. Moreover, the propagation of vaccine virus by any one but a thoroughly educated regular physician is bound to lead to trouble and disaster—to the patients, at any rate, if not to the producers.

I must ask the profession to in no way confound my establishment with those mentioned in the report.

Very truly yours, FRANCIS C. MARTIN, M.D.

METEOROLOGICAL RECORD.

For the week ending April 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r. *		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S..22	29.82	52	60	45	96	78	87	E.	S.E.	5	5	O.	C.	.07
M..23	29.92	54	62	47	88	63	76	S.E.	S.W.	5	7	F.	C.	.04
T..24	29.92	51	56	46	78	89	24	N.E.	N.W.	11	7	F.	C.	.13
W..25	30.10	52	63	41	72	54	63	N.E.	S.W.	12	8	C.	C.	
T..26	30.05	59	72	46	41	32	36	W.	W.	8	9	C.	C.	
F..27	29.98	66	79	52	47	58	52	W.	S.W.	12	13	C.	C.	
S..28	29.90	65	75	55	44	60	62	W.	N.	10	9	F.	R.	0.03
☾	29.97	67	47		64									.25

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☾ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 28, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Measles.	
New York	1,891,306	781	309	16.12	17.03	1.82	8.19	1.95	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	408	122	11.50	13.50	1.75	3.75	1.25	
Brooklyn	978,294	416	156	13.58	21.54	.70	4.80	3.36	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	232	69	10.04	20.16	1.35	4.62	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	120	39	9.13	14.11	.83	4.98	—	
Cincinnati	305,000	108	31	17.48	23.00	2.76	11.96	—	
Cleveland	290,000	103	50	8.73	16.49	.97	4.85	.97	
Pittsburg	263,709	89	36	11.20	16.80	1.12	2.24	2.24	
Milwaukee	250,000	67	31	12.32	20.72	2.96	2.96	1.48	
Nashville	87,754	30	12	6.66	6.66	—	—	—	
Charleston	65,165	29	14	10.35	6.90	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	16	4	6.25	6.25	—	6.25	—	
Fall River	87,411	—	—	—	—	—	—	—	
Lowell	87,191	23	6	13.05	13.05	—	4.35	—	
Cambridge	77,100	27	9	22.20	18.50	7.40	—	—	
Lynn	62,638	12	2	25.00	8.33	—	—	—	
Springfield	48,694	23	6	4.35	13.05	4.35	—	—	
Lawrence	48,355	—	—	—	—	—	—	—	
New Bedford	45,886	25	12	8.00	16.00	—	—	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,233	12	4	8.25	6.25	—	—	—	
Brookton	32,140	7	2	14.28	42.84	—	14.28	—	
Haverhill	31,896	10	3	—	20.00	—	—	—	
Chelsea	30,284	—	—	—	—	—	—	—	
Malden	29,394	6	1	—	16.66	—	—	—	
Newton	27,556	11	1	9.09	9.09	—	9.09	—	
Fitchburg	27,146	2	0	—	—	—	—	—	
Taunton	26,972	7	3	14.28	14.28	—	—	—	
Gloucester	26,685	—	—	—	—	—	—	—	
Waltham	23,058	3	2	—	33.33	—	—	—	
Quincy	19,642	4	1	—	25.00	—	—	—	
Pittsfield	18,802	2	1	—	—	—	—	—	
Everett	16,868	2	0	—	—	—	—	—	
Northampton	16,331	2	0	—	50.00	—	—	—	
Newburyport	14,075	5	2	—	—	—	—	—	
Amesbury	10,920	5	1	—	20.00	—	—	—	

Deaths reported 2,611: under five years of age 937; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 836; acute lung diseases 451, consumption 312, diphtheria and croup 141, diarrhoeal diseases 42, measles 38, scarlet fever 33, typhoid fever 23, whooping-cough 22, erysipelas 13, cerebro-spinal meningitis 12, small-pox 9, malarial fever 2.

From scarlet fever New York 10, Brooklyn 8, Philadelphia, 6, Boston and Pittsburg 2 each, Cincinnati, Nashville, Lowell, Cambridge and New Bedford 1 each. From typhoid fever Philadelphia 6, Boston 4, Washington, Cincinnati and Milwaukee 2 each, New York, Brooklyn, Nashville, Lowell, Lynn, New Bedford and Taunton 1 each. From whooping-cough New York 6, Philadelphia and Pittsburg 3 each, Boston and Cambridge 2 each, Washington, Milwaukee, Charlestown and Lynn 1 each. From erysipelas New York 7, Philadelphia 3, Brooklyn,

Boston and Milwaukee 1 each. From cerebro-spinal meningitis New York 4, Cleveland and Somerville 2 each, Philadelphia, Washington, Lynn and Salem 1 each. From small-pox New York and Brooklyn 4 each, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,468,442, for the week ending April 14th, the death-rate was 19.3. Deaths reported 3,877: acute diseases of the respiratory organs (London) 304, whooping-cough 142, measles 87, diphtheria 72, scarlet fever 50, diarrhoea 38, fever 33, small-pox (Birmingham 3, West Ham 2, Portsmouth 1) 6.

The death-rates ranged from 11.6 in Huddersfield to 31.9 in Wolverhampton; Birmingham 21.8, Bradford 17.9, Croydon 12.6, Halifax 17.4, Leeds 16.2, Liverpool 24.7, London 19.3, Manchester 22.8, Nottingham 18.4, Portsmouth 15.6, Sheffield 18.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 28, 1894, TO MAY 4, 1894.

Leave of absence for two months, to take effect on or about May 1, 1894, with permission to go beyond sea, is granted MAJOR CALVIN DEWITT, surgeon.

CAPTAIN C. N. BERKELEY MACAULEY, assistant surgeon, is relieved from duty at the U. S. Military Academy, West Point, New York, and ordered to duty at Fort Wingate, New Mexico, relieving MAJOR WASHINGTON MATTHEWS, surgeon, who, on being thus relieved, will repair to Washington, D. C., and report in person to the surgeon-general for temporary duty in his office.

So much of paragraph 13, S. O. 72, A. G. O., April 3, 1894, as assigns MAJOR PETER J. A. CLARY, surgeon, to duty at Fort Wingate, New Mexico, is revoked.

Leave of absence for two months, on surgeon's certificate of disability, to take effect when his services can be spared, with permission to leave the Department of the Colorado, is granted CAPTAIN EDWARD EVERTS, assistant surgeon.

ASSOCIATION OF AMERICAN PHYSICIANS, AND CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The ninth annual meeting of the Association of American Physicians will be held in connection with the third Congress of American Physicians and Surgeons at Washington, D. C., May 29, 30 and 31, and June 1, 1894.

The Association will hold its meetings in Hall No. 2, Columbian University, corner of Fifteenth and H Streets. The sessions of the Association will be held in the morning, between the hours of ten and one, and those of the Congress will be held in the afternoon, between the hours of two and six.

The following is the programme of the meetings of the Association:

Tuesday.—1. "President's Address." Reginald H. Fitz, Boston. 2. General Business, Reports, etc. 3. "The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults." Beverly Robinson, New York. 4. "A Treatment of Typhoid Fever." Samuel A. Fisk, Denver. 5. "Six Cases of Traumatic Headache." C. F. Folsom, Boston. 6. "Clinical Report of Two Cases of Raynaud's Disease." Frederick P. Henry, Philadelphia. 7. "Dr. S. C. Martin's Researches on the Bacteria of Vaccine." Harold C. Ernst, Boston.

Wednesday.—8. "Modification, Temporary and Permanent, of Physiological Characters of Bacteria in Mixed Cultures." Theobald Smith, Washington. 9. "The Effect of Various Metals on the Growth of Pathogenic Bacteria." Meade Bolton, Baltimore. 10. "Note on the Observation of Malarial Organisms in Connection with Typhoid Fever." W. Gilman Thompson, New York. 11. "Experiments in Artificial Melanosis." George Dock, Ann Arbor. 12. "Stomatitis Neurotica." A. Jacobi, New York. 13. "Tetany in America." J. P. Crozer Griffith, Philadelphia.

Thursday.—14. "Lead Palsy in Children." Wharton Sinkler, Philadelphia. 15. "A Study of the Temperature in Cerebral Apoplexy." Charles L. Dana, New York. 16. "The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis." John H. Muzzey, Philadelphia. 17. "Some Remarks on the Significance of Albumin and Casts, especially in those past Middle Life." Frederick C. Shattuck, Boston. 18. "Experimental Phthisis in the Rabbit with Formation of Cavities: A Demonstration." T. M. Prudden, New York. 19. "A Report of the Ultimate Results Obtained on Experimental Eye Tuberculosis by Tuberculin Treatment and Anti-Tubercular Inoculation." E. L. Trudeau, Saranac Lake.

Friday.—20. "Some of the Chemical and Bacteriological Characteristics of Milk." Thomas M. Rotch, Boston. 21. "The Chemical Products of the Anaerobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphia." Victor C. Vaughan, Ann Arbor. 22. "Gastro Enteric Rheumatism." H. M. Lyman, Chicago. 23. "A Case

of Osteomalacia." George Dock, Ann Arbor. 24. "A Case of Mitral Stenosis, with great Hypertrophy of the Right Ventricle: Death from Hæmoptysis." A. McPhedran, Toronto. 25. "A Case of Calculous Pyelitis with Invasion by the Bacillus Lactis Aerogenes." J. H. Musser, Philadelphia. 26. Concluding Business.

The following subjects will be considered by the Congress: "Morphology as a Factor in the Study of Disease." "Sewer Gas." "The Distribution and Control of Leprosy in the United States." "Nephritis in its Surgical Aspects." "The Conservative Surgery of the Female Pelvic Organs." "The Surgery of the Accessory Sinuses of the Nose." "The Influence of Infectious Processes on the Nervous System."

On Wednesday there will be a Dinner to the guests of the Congress at the Arlington Hotel; and on Thursday Evening Dr. Alfred L. Loomis, President of the Congress, will deliver an Address on "The Influence of Animal Experimentation on Medical Science," which will be followed by a Reception.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Massachusetts Institute of Technology, Walker Building, corner of Clarendon Street, on Monday evening, May 14th, at quarter past eight o'clock, precisely.

Dr. W. M. Conant will read a paper on "College Athletics." The discussion will be opened by Dr. H. P. Walcott, President Eliot, General Walker, Mayor Bancroft and Dr. W. A. Brooks. Physicians interested in the subject are cordially invited to be present.

JOHN T. BOWEN, M.D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, May 16th, at 8 o'clock.

Papers: Dr. H. C. Vickery, "Fatal Vomiting without Discoverable Cause."

Dr. J. Bergen Ogden, "Three Cases of Chronic Bright's Disease of Different Types."

F. C. SHATTUCK, M.D., Chairman.

HENRY JACKSON, M.D., Secretary.

TWENTY-FIRST NATIONAL CONFERENCE OF CHARITIES AND CORRECTION will be held at Nashville, Tenn., beginning May 23d and closing Monday, May 28th.

The membership of the Conference includes members of State Boards of Charities, delegates from Charity Organization societies, officers of public and private charitable and correctional institutions, official delegates appointed by the Governors of States, and all other persons directly or indirectly connected with charitable work. All persons included under this general description are invited to attend the Conference, and the boards in charge of charitable or correctional institutions, public or private, are invited to send delegates.

The Conference is non-sectarian and non-political, and its aims are purely scientific and philanthropic.

L. C. STORRS, President, Lansing, Mich.

A. O. WRIGHT, Secretary, Madison, Wis.

JOHN M. GLENN, Treasurer, Baltimore, Md.

RECENT DEATHS.

DR. JULES ARNOLD, Professor of Hygiene in the Faculty of Medicine at Lille and one of the Army Medical Inspectors of France, died recently, aged sixty-three years. He was an army surgeon during the Crimean War and in 1862 was professor of military hygiene at Val de Grâce.

BOOKS AND PAMPHLETS RECEIVED.

The Therapeutic Uses of the Salts of Cesium and Rubidium. By Theodore W. Schaefer, M.D., of Kansas City, Mo. Reprint. 1894.

Proceedings of the Inaugural Meeting of the Medical Association of India held at Calcutta on February 21, 1894. Reprint. 1894.

Further Remarks on the Occurrence of a Form of Non-Albuminous Nephritis other than Typical Fibroid Kidney. By D. D. Stewart, M.D. Reprint. 1894.

The Medical Annual and Practitioners' Index; a Work of Reference for Medical Practitioners. Twelfth year. Bristol: John Wright & Co. 1894.

Thirty-third Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati for the Fiscal Year ending December 31, 1893. Frank W. Hendley, M.D., Superintendent. Cincinnati. 1894.

Traitement des Rétrécissements par l'électrolyse linéaire. Par le Dr. J. A. Forb, Ancien Interne des Hôpitaux, Professeur libre d'anatomie à l'Ecole Pratique de la Faculté de Médecine de Paris. Paris: G. Masson. 1894.

Address.**ANNUAL ADDRESS**

DELIVERED AT THE OPENING OF THE TWENTY-FOURTH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA, APRIL, 1894.¹

BY C. G. KENYON, M.D., PRESIDENT, SAN FRANCISCO, CAL.

LADIES AND GENTLEMEN, MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA:—The Architect of the Universe has, with lavish hand, bestowed his benefits upon our State and upon the various sections of the State that we severally represent. We have a soil which, under the touch of the husbandman and the influence of an unequalled and varied climate, brings forth in abundance the fruits and products alike of the temperate and of the tropical zone. And where, in all the broad domain of our sunny California, do we find a section more richly blest than this Santa Clara Valley, enclosed about with mountain side, bedecked throughout its entire length and breadth with happy homes, and in its centre seated the beautiful Garden City, lovely San José, famed throughout our State for its wealth, its culture, and its learning? Our profession is ably represented in this hall by a large delegation of the resident physicians, who have ever kept abreast with the general onward march of the times, no feature of which is more marked than the great strides taken by our science in the triumphal procession.

Surrounded as I am by so many who have become eminent in our profession, I can hardly flatter myself that many here expect to learn anything new from a president's annual address, and it is more than probable that if any did their expectation would be disappointed. But an annual address is a time-honored custom, and it seems to me that its office is less to impart information than to give public expression to, and, perhaps, to afford opportunity for, more general discussion of ideas, which, no doubt, have often suggested themselves to many individual members. I propose to mention briefly a few matters, which, I think, concern the good and the welfare of our Society, claiming for myself no merit as an original discoverer, and leaving it to this convention to determine for itself to what extent, if any, the suggestions now presented are acceptable to the majority of its members.

It is quite the fashion, in addresses by medical men, for the speaker to lament, in a pessimistic mood, the deplorable lack of higher education and general professional attainments in the profession in our own country, as compared with the standard in other older, and, especially, European countries. To these jeremiads I desire to offer my humble protest. While my voice will always be uplifted in favor of the best type of manhood, and the highest standard of attainments, as pre-necessary qualifications for those who would assume the honorable title of M.D., yet I am pleased to call your attention to the general activity and earnestness displayed by the profession within the influence of this Society, and I venture the assertion that, striking a general average of the profession in California, no body of men can be found under the sun better informed and more capable as a whole than we have here. In proof of this assertion, I refer you to the high standard adopted by our medical schools, the vast amount of

medical literature, local and foreign, received and supported by our profession; the prevalent custom among our young men to go abroad to further qualify themselves, in wider fields, for professional work; and the general activity exhibited in our local and State organizations.

That this Society is an important, and may be made to become a more important, factor in maintaining this standard of excellence, is a statement which I need hardly make here. Your presence as members of this organization, many of you coming great distances from your homes to attend this convention, testifies to your appreciation of the fact. This being so, is it not well that we should consider whether by any, and if by any, by what means we may best extend and widen this Society's sphere of acknowledged usefulness? I propose to offer for your consideration some changes in the constitution and by-laws of this Society, with the end in view of increasing our membership, our working capacity, and our power of advancement of the profession within this State.

We are pleased to call this organization "The Medical Society of the State of California," a very high-sounding and comprehensive title. But when we consider the fact that out of 2,700 licensed practitioners of regular medicine in the State our membership consists of some 360 only, it becomes apparent how short we fall of fulfilling the high and important mission which our title, and our objects as declared in our constitution, would indicate.

As I have before intimated, we may assume, without argument, that membership in this Society is beneficial to the members and to the advancement of our science. It becomes, then, our duty to consider the proper and best course to pursue to extend those benefits to the utmost limits. That we have been only partly successful under our present plan of organization, is too patent to require discussion. Having given this matter much thought and consideration, I desire to bring before you some suggestions, which, if they are found worthy of your approval, will, I believe, increase our membership and extend our field of usefulness.

[These suggestions included a recommendation of a reduction of annual dues, the abolition of enforced continuous membership in the local society, and the establishment of a quarterly bulletin, containing such information and contributions as the Committee on Publication might deem most worthy of space.]

Overcrowding in the Profession.—As before stated, in this State we have about 2,700 practitioners of medicine and surgery, graduates of regular medicine and licentiates of its Board of Examiners, without counting several hundred licentiates of homoeopathy and eclecticism. This vast number has as a field of labor a State with a population of 1,500,000, which by a simple process of division shows one doctor to every 500 of population. To say that our profession is overcrowded expresses a fact too patent to admit of discussion. As an equal distribution leaves only this small ratio for a clientele, what must be the portion left to some of the profession, when we find leading physicians who enjoy the patronage of thousands? The obvious tendency of this overcrowding, it is to be feared, is to lower the standard of professional conduct among regularly educated and licensed practitioners.

We have also to consider, in addition to this unpleasant picture of a small army of medical men striving for existence in a limited field, a host of quacks of

¹ The following extracts from Dr. Kenyon's Address are from advance sheets of the Occidental Medical Times.

various kinds and degrees, who, like the camp-followers that hung about Sherman's army on its famous "march to the sea," are ever on the alert to pick up choice bits of forage and sustenance that should fall to the lot of the regular soldier, whose mess must suffer to the extent of the irregular depredations. Here we have a somewhat homely, but, I think, pertinent illustration of the situation.

But it is easier to depict this unfortunate condition of affairs than to recommend measures of adequate relief. The following suggestions, however, seem to me to be appropriate: We should no longer hold out to intending students of medicine alluring pictures of the excellence of this State as a field for practice. Until the time comes, if ever, when there shall be a more reasonable proportion between practitioners and patients, it is bound to be a question of the survival of the fittest, and meanwhile, only moderate encouragement should be given to students, and to those only who, by more than average ability, and by a high degree of preliminary education, give promise that at the end of their course of medical study they will come into the field fully equipped and qualified to engage in what, at best, must be a struggle for existence.

Again, it is well known that medical men cannot go from this to other countries on the American continent or in Europe and assume the practice of medicine until after a strict examination there, and the securing of a certificate in accordance with the laws of the government under which they may choose to settle. We, however, with that excess of liberality found only in this land of refuge for all people, and of the refuse of many, the "Heathen Chinee" not excepted, receive all comers with open arms, welcome them to share our meagre loaf, and our people patronize them to the exclusion, frequently, of those to the manor born, and at least equally qualified by natural ability and education. The halo of mystery and greatness which hovers about a foreign doctor seems to have a peculiar fascination for the American mind, and our imported frater is not always too modest to use this peculiar bent for all the advantage it may bring him.

Hospital Clinics and Free Dispensaries.—The influence of hospitals, dispensaries, college clinics, etc., upon the general practice, has been considerably discussed of late. That the increase of such institutions is having a marked effect upon the field of labor of the general practitioner, especially in metropolitan centres, needs no argument. That the best service in all branches of practice is freely given in the several free dispensaries or clinics in San Francisco, while the excellent hospitals offer to the afflicted at small cost, a haven where capital operations are performed daily by skilled operators under the advantageous surroundings of the most modern methods, and that the tendency of all this is to diminish the field for work for the less favored who constitute the larger portion of the profession, is also an accepted fact.

The young man entering the profession, however well fitted by thorough training, supplemented by hospital experience in the best institutions in the world, finds but a limited scope for his talents, if he be not one of the fortunate few holding positions in public or private institutions that bring to them abundance of material for the exercise of their acquired skill. He must content himself with sitting patiently in his office, waiting for business that is long in coming or that may never come. The claim that suffering humanity

alone should be considered in a question like this—that better service can be rendered in hospitals under aseptic conditions—is no doubt to a certain extent just, and the general practitioner, recognizing this and frequently ready to sacrifice his own interests to that of his patient, is often quite ready to recommend a sufferer to the hospital. He even goes there himself, and, with his hands in his pockets, or behind him (as a precaution against the conveyance of germs from his polluted person) watches his more fortunate brother, made clean by aseptic ablutions and bedecked in a clean apron, do his work. Then he goes away filled with a satisfying consciousness of having served his patient well, but with an empty pocketbook and a lack of that practical experience which properly belongs to him. He is little benefited even by observing the operation; it is one that he has probably seen and taken part in many times before.

The practice thus outlined may be best for humanity, but it results in making experts of one class, while the great mass of medical men are dropping into mediocrity and losing the incentive to improve their acquired ability for lack of opportunity to exercise it. In the rapid growth of this dispensary system, our medical men are themselves the most active agents. I speak only of dispensaries under the management of regular practitioners, such as college clinics, dispensaries, etc., under the auspices of colleges or associations, conducted in the name of charity, sweet charity, under whose banner skilled services, medical and surgical, are free as water. Various means of advertising, all strictly legitimate, are resorted to to encourage the afflicted to seek professional aid in these free centres of practice, while around the corner—many corners—are seated in their offices well-skilled medical men waiting in vain for their fair share of business, which, if an equal division could be made, would leave them a clientele of less than 600.

If all who availed themselves of this gratuitous system of service were really entitled to it, there would be less cause for complaint, but it is well known that many who can well afford to employ a general practitioner, now resort to these institutions whose real object is, or should be, to dispense medical and surgical aid to the poor and needy.

It is well, occasionally, to get down from the high plane from which this subject is frequently treated. Medical men are prone to soar to a high level. We speak of our remuneration as an "honorarium," yet after all we are only a class of bread-winners in common with others of our fellow-beings—an honorable class—striving to earn a livelihood by the pursuit of our profession. The practice of medicine is our business; and most of us are, or ought to be, supporting and educating families out of the legitimate financial proceeds of our business. If we could all become suddenly alive to this important fact, and could at once proceed like a band of brothers to a fair and equitable distribution of work and its proceeds, then, indeed, should we see a medical millennium; but this is, of course, a chimera. No medical body, much less an individual, is likely to change the trend of current events. Some good, however, may be attained by directing our attention, for a moment, to these problems, and to their bearing upon the welfare of the medical world.

Feticide.—Feticide, infanticide, and methods of preventing pregnancy, are subjects tabooed in polite society, and even in a body of medical men, they gen-

erally receive little or no attention. The evil, however, is becoming one of such magnitude, so far reaching in its effects, that I feel it incumbent upon me, as the temporary exponent of this Society, to give free and bold expression to the abhorrence in which all reputable practitioners must hold the various methods of prevention of child-bearing, and the very frequent procurement of abortions, as tending to deteriorate the moral tone of society, debauch public sentiment and shake the foundations of society — the domestic relation, the home. That regular medical men and women, such as constitute my hearers, do not participate in these disreputable practices, is a position I desire in the strongest manner possible to maintain, but that in the popular mind we escape the odium attached to them, is, unfortunately, not susceptible of proof. It is too true that the upright regular practitioner shares with the charlatan or advertising quack whatever popular opprobrium these nefarious secret practices receive. With the great public a "doctor" is a doctor. Reputable medical men and women who indignantly dismiss a patient who applies to them for such a purpose, are frequently met with the remark, "Why, I thought all doctors did it." And so the few cases which are brought to public notice through the death of the unfortunate woman at the hands of some scoundrel man or woman, calling himself or herself "doctor," bring odium on our profession, and usually without remonstrance on our part.

It is high time the regular profession should take a stand and clear its skirts of the opprobrium. It is our duty, both by precept and practice, to establish the fact in the minds of the public that we have no sympathy with criminal business, or with the criminals who practise it. When that point is attained we may reasonably hope for some abatement of the evil. It is a lamentable fact that a large proportion of the male population believes that this nefarious business is practised by almost all medical men, and while that popular impression prevails juries will not convict, even in flagrant cases. It has been demonstrated in recent trials in San Francisco that a man who has openly practised a criminal business for many years, who drags his unfortunate victim from his own infamous den and places her upon a car to die a few hours later in transportation, may go scot free.

The public prints are frequently filled with the nauseating details of some of these cases; many, we know, are hushed up, while the culprits are left unmolested to continue their unlawful practices. One solitary conviction stands out in bold relief, and this, in the present perverted state of public sentiment, seems somewhat of a shock. "Why should not this man have gone free when everybody is doing it?" asks many a good citizen; and, in fact, it is doubtful whether the conviction in that case was as much a mark of the jury's disapprobation of the crime committed on the living body as it was of its horror of the barbarous mutilation of the senseless corpse.

The prevention of these unlawful practices is ultimately a matter for the people and for the courts. The present law seems inadequate, and public sentiment does not seem to be strong enough to devise proper remedies. Does it not behoove us, therefore, to do what we may towards stemming this tide of immorality? The regular profession should take no unequivocal ground, but should, in season and out of season, contend against the continuance of these prac-

tices, and strive to educate the people to a higher plane of morality. If we do not do so, the fair eulogium of our time-honored profession will continue to suffer the opprobrium brought upon it by the practices of a disreputable class with whom we have no connection by sympathy or association.

It should be the duty of the physician not only to frown down these practices, but also to use the greatest care, lest by a word or hint he carelessly direct an applicant for criminal relief to one of these dens of infamy. It will not do to say to an unfortunate suppliant that such and such persons have the reputation of doing these things; we cannot afford to become even indirectly agents, or "steerers," if I may use the term, for these people, simply as an easy method of getting rid of an undesirable patron. No; the proper thing to do is to answer these deluded women in a manner short and sharp, "We have nothing to do with such cases, and do not know of any one who practises criminal business."

The statutes in reference to evidence in cases of criminal abortion should be modified, so that evidence of the only other witness to the crime beside the operator might be available to prove guilt.

Embalming. — The disposition of the bodies of the dead, owing to the growing sentiment in favor of cremation, occupies a prominent place in the minds of the medical profession. For sanitary reasons, the profession is almost a unit in favor of incineration. One objection to this plan for disposing of the dead, however, from a medico-legal point of view, is that by it all evidence of the cause of death disappears, if we may be allowed to use the expression, in smoke.

While speaking on this point, it is pertinent to refer to a custom which is becoming established among undertakers, and which should be stopped. I refer to the injection of the body immediately after death with embalming or preservative fluids, a proceeding in this climate wholly unnecessary. It is a trick that is being too successfully worked by undertakers, for their own profit, on the friends of the deceased. Thoughts of economy, much less of parsimony, seldom enter the minds of the grief-stricken family, and so when the shrewd undertaker, with thoughts of his coming bill, suggests, "Of course you wish the body embalmed?" the answer is rarely in the negative. But I refer to the matter for the more important reason that the corpse, after being subjected to this so-called embalming process, is saturated with mineral poison, obliterating every evidence of crime, if any exists. I recommend that the Committee on Legislation endeavor to have a law passed prohibiting the use of any embalming process until after permission has been granted by a coroner or other proper officer.

The Code of Ethics of the American Medical Association. — The Code of Medical Ethics adopted by the American Medical Association and by the Medical Society of the State of California has been the Magna Charta of the profession throughout the United States for many years, and has seemed ample for the purpose for which it was designed — the regulation of the conduct of members of the profession. However, the development of specialties and the overweening desire of some of the leading medical men in New York City to enlarge the scope of their practice has of late caused a departure from some of our long-established principles, and the adoption of a modified Code in the State of New York.

At a recent meeting of the American Medical Association a committee was appointed to revise the Code, and the matter will undoubtedly be brought up at the meeting to be held this year in San Francisco. I do not propose to attempt to influence the action of members of this Society in this matter, but I urge you all to study the Code thoroughly, and if, after mature reflection, that Code, which has stood the test of time, meets your approbation, I would be glad to see the profession in California loyal to its tenets. The medical profession in the United States has done well under the present Code of Ethics; its history is one upon which we can reflect with pride. Under this Code, ample scope has been allowed for the progressive members to make brilliant records by the introduction of new methods in the practice of medicine and surgery, which have redounded to the credit of the medical world.

Quarantine and Cholera.—At the time of the twenty-third annual meeting of this Society in 1893, Asiatic cholera threatened to invade England and the United States. That we were not visited by the dreaded scourge is due to the enlightened and efficient measures adopted to arrest it; and although infected ships arrived off New York, the barriers proved effectual. The loss of human life, not to speak of the damage to the business interests of the country which an epidemic of Asiatic cholera would have caused, cannot be measured. Such an invasion would have demoralized all traffic, have paralyzed our commerce, and have proved the utter ruin of the great Columbian Exposition. The success attending the measures adopted to avert this disaster is the highest testimony to the efficacy and value of modern sanitary science.

Lecture.

URINARY DIAGNOSIS.¹

BY EDWARD S. WOOD, M.D.,
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LECTURE I.

I do not expect to do full justice to the subject of "Urinary Diagnosis" in the two hours that are allotted to these lectures; but I will endeavor to condense the material in such a way as to include most of the important changes which occur in the urine and which are of diagnostic importance.

In the early history of medicine we learn that the urine was examined for diagnostic purposes, and this examination was of assistance in the diagnosis and prognosis and in deciding as to the treatment of different diseases. It so happens that I have in my possession a work that was published more than three centuries ago, which is devoted entirely to the examination of the urine. In more recent times, after the chemical composition of the urine became better understood, and yet before the microscope was fully developed, certain changes were detected in the chemical composition of the urine, which were considered of so much importance that they received a special name, and these names were generally used as indicating certain diseases. They are still in use to-day. I refer to the terms albuminuria, glycosuria, hæmaturia, oxaluria, and cysti-

nuria; these all have a distinct meaning, and the changes which they represent are of very great importance. Their use is continued at the present time, as it should be, but their meaning is very properly so restricted as to indicate simply a symptom, possibly of many different pathological conditions. A great many of us in the present generation can remember very distinctly the time when the terms albuminuria and Bright's disease of the kidney were considered synonymous. Of course, we all now know that the term albuminuria means simply the presence of albumin in the urine, and that it may occur in a great many diseases. The term is by no means synonymous with Bright's disease, and in the majority of cases of albuminuria there is no organic disease of the kidney. The study of this symptom—albuminuria—I shall defer until later when we consider the character of the urine in the various kidney diseases.

Glycosuria, which used to be considered as synonymous with diabetes mellitus, means simply the presence of grape sugar in the urine. We now know that there are other conditions which are characterized by the presence of grape sugar in the urine. It is of very great importance to be able to distinguish, from the examination of the urine, between cases of diabetes and cases of simple glycosuria. In order to do that, we must take into consideration several other important diagnostic features. One is, as to whether the grape sugar is present in the urine permanently or temporarily. In diabetes, if the patient remains untreated, grape sugar is present in the urine in considerable quantity and for a long time, whereas, in glycosuria due to other causes, the sugar is present in the urine, usually, in small quantity and temporarily. The general character of the urine in diabetes I need only allude to. The daily quantity is large; in extreme cases from six to eight quarts in twenty-four hours. It is of pale color, high specific gravity, and contains a large amount of grape sugar, varying from two or two and one-half to nine or ten per cent. of the total weight of urine, so that a patient suffering from regular diabetes may eliminate two or three pounds of grape sugar in twenty-four hours. But, you will observe in studying the urine in many cases of diabetes, that there are two distinct classes of cases, in both of which the daily quantity of urine and of sugar may be very large, but if the urine passed at different times of day be examined separately, it will be found that in some cases nearly all of the sugar eliminated is contained in the urine passed after eating, while the fasting urine contains but a very small percentage of sugar; whereas, in other cases, there is but little if any difference in the percentage of sugar in the urine secreted at these two different times. Clinically, these two kinds of cases are quite distinct. Those cases in which the fasting urine contains about as large a percentage of sugar as the after-meal urine, generally resist all treatment, pursue a fairly rapid course, and terminate fatally in a comparatively short period of time. Whereas, those cases in which the fasting urine contains but a very small percentage of sugar, the patient may be so much relieved by treatment that the grape sugar may disappear from the urine entirely, although he may have had glycosuria for several years. Cases of temporary glycosuria are of comparatively little consequence from a diagnostic point of view, since the glycosuria is secondary to some disease, the nature of which is generally easily recognized, as in some cases of apoplexy,

¹ Evening Lecture delivered at the Harvard Medical School, February 21, 1894.

head injuries etc. In these cases the quantity of urine is not increased as much as in either of the forms of diabetes.

The term hæmaturia, which has been in use for many years, indicates, as its name implies, the presence of blood in the urine. In recent years, however, this term has been subdivided according as the urine contains *all* of the constituents of the blood, both globules and serum, hæmaturia, or only the coloring matter, hæmoglobinuria. The distinction between these two conditions is, that in hæmaturia, which is due to hæmorrhage from some portion of the kidneys or urinary passages, we find upon examination of the urine more or less of the blood pigment, partly decomposed or not, in solution in the urine, and, upon microscopical examination of the sediment, we see a large number of blood corpuscles, so that we have all of the elements of blood present in the urine. In cases of hæmoglobinuria, on the other hand, we find only blood pigment in the urine. The blood pigment is set free from the red corpuscles within the blood-vessels and not in the urinary passages, and it is simply eliminated from the blood by the kidneys. Upon microscopic examination of the urinary sediment, in cases of hæmoglobinuria, we do not see any blood corpuscles in the sediment, and we have, therefore, only the coloring matter of the blood in the urine without the blood corpuscles. Hæmaturia means simply hæmorrhage from the urinary or genito-urinary passages, while hæmoglobinuria means blood pigment in the urine and it is a symptom of a disease of the blood and not of the kidneys or urinary passages.

Oxaluria is a term which signifies the presence of calcic oxalate in the urine and this condition is sometimes of diagnostic importance. It is detected by seeing the calcic oxalate crystals in the sediment upon microscopic examination. This means that oxalic acid has been formed in the economy, or that it has been taken into the economy with some article of food or drink. Its importance depends entirely upon the quantity which appears in the urine and upon its permanency. No doubt all of us have occasionally a temporary oxaluria due to some article of food or drink, which contains oxalic acid. The drug rhubarb, as well as the garden rhubarb, will impart a certain amount of oxalic acid to the economy. If calcic oxalate is found in considerable quantity in the urine, we are pretty sure, also, to find evidence in the sediment, of the local action of the sharp calcic oxalate crystals upon the lining membrane of the renal tubules. They scratch more or less, and cause mechanical irritation of the kidneys, the evidence of which may be detected in the sediment together with a number of the crystals. If the oxaluria is long continued, there is always danger that a mass of the crystals may become aggregated together with fibrin or mucus, and form an oxalate concretion. You all know how serious are the effects produced by the so-called mulberry calculus, which is composed of calcic oxalate; its rough surface produces so much inflammation and hæmorrhage that the mulberry calculus is almost invariably dark brown or black in color owing to the decomposed blood pigment which is present in its structure.

Chyluria is one of the old terms which comes more nearly meaning a disease than most of the other terms applied to certain changes in the composition of the urine. The term chyluria means simply the presence of chyle in the urine. That can only occur in case

there is some connection between the lymphatics and the urinary passages, and, we know now, that the disease of the lymphatics is caused by the presence in them of a parasite, the *filaria sanguinis hominis*. Chylous urine is a milky-looking urine, which contains fat in so finely divided a form that it never separates, if the urine is prevented from decomposing. The fat neither settles as a sediment, nor rises to the surface to form a film. In many cases of chyluria we may have this peculiar appearance present in the urine only at certain times of day, or it may be present for a period of several weeks and then disappear, only to recur again at some later period. This specimen of chylous urine, which I have here, was passed by one of the medical students, a native of Cuba, and when perfectly fresh was hermetically sealed in this test-tube, which has not been turned upside down since the urine was placed in it in 1876. Yet, as you see, the milky appearance is as evident in the upper as in the lower layers of the fluid. The fat is so finely divided that it cannot be detected by examination even with the highest powers of the microscope in the shape of oil globules. This fact enables us to distinguish readily between chylous urine and urine to which milk has been added. Milk is sometimes added to the urine by hysterical patients for the purpose of deception. If the urine contains milk a drop of the milky fluid examined under the microscope is seen to contain the oil globules of the milk. Another means of distinguishing these two conditions, is to shake a little of the milky urine in a test-tube with ether. When chylous urine is shaken with ether the fat is readily dissolved by the ether, and when the ether separates from the urine, it is seen that the latter fluid has lost its milky appearance. Ether will not separate the fat from urine to which milk has been added.

Cystinuria. The diagnosis of cystinuria is made only by recognizing on microscopic examination the peculiar crystals of cystin. These crystals are colorless, hexagonal plates, readily soluble in ammonia and the mineral acids, but insoluble in acetic acid. It contains a very large percentage of sulphur 26 per cent., and is probably due to some faulty metabolism by which the sulphur derived from the albuminoids is eliminated in the form of cystin instead of in the form of taurine of the bile. The recognition of cystin is of importance only as enabling us to distinguish between that form of urinary deposit and others in cases of urinary concretions, in the examination of the urine for diagnostic purposes.

Alkaptonuria. This is another condition of the urine which has received a special name, and I did not intend to mention it all, since I did not consider it of sufficient importance on account of its great rarity. It is so rare that I have never seen a specimen until the present week. This condition of the urine is of greater importance to the life insurance examiner than to the general practitioner, on account of the danger of mistaking a case of alkaptonuria for one of diabetes mellitus. The so-called alkapton, which the urine contains in this condition, may be one of several substances which are powerful reducing agents when in alkaline solution, so that such a urine responds to some of the tests for a diabetic urine, particularly the Heller and Trommer tests, and the test with Fehling solution. A urine containing alkapton is usually normal in color when passed, but after exposure to the air it becomes dark brown in color like that of a carbolic-acid urine.

The quantity in the twenty-four hours is apt to be diminished rather than increased. If rendered alkaline with sodic hydrate and shaken in a test-tube, it absorbs the oxygen from the air in the upper part of the tube, and becomes dark brown in color, rapidly as you see, and at the same time it creates a partial vacuum in the test-tube, so that if the tube be inverted under water, an amount of water equivalent to the volume of oxygen absorbed will be sucked into the test-tube. Some specimens will absorb as much as four-fifths of their volume of oxygen. A urine containing alkapton may be readily distinguished from one containing grape sugar by the following properties: it becomes dark brown in color slowly on exposure to the air and very rapidly if rendered alkaline with sodic or potassic hydrate. It does not react to the fermentation test as does diabetic urine. A person whose urine contains alkapton may enjoy perfectly good health, so that such specimens are only seen in those who present themselves to the life insurance examiner, and those who enter a hospital or consult a physician for some disease entirely unconnected with the condition which causes the alkaptonuria.

In the examination of the urine for diagnostic purposes, of the utmost importance is the quantity of urine that is passed in twenty-four hours. It is absolutely essential in making a differential diagnosis between certain forms of kidney disease, and it is also of very great importance to know exactly the quantity of urine that is passed in many other cases than in organic diseases of the kidney. Let me here say that it is never wise to rely upon the statement of the patient in regard to the quantity of urine passed. You will very frequently be told that he or she is passing no more than usual, whereas, they may be passing from two and one-half to three and one-half quarts in the twenty-four hours. You may be told by the patient that he is passing a much larger quantity than usual, and upon measuring it you will find that he is passing a much smaller amount than normal. In all cases where the examination of the urine is essential in making a diagnosis of kidney or other disease, it is in a vast majority of cases essential that the twenty-four hour quantity should be accurately known. In some cases, it is also necessary to know the relative quantity passed in the day and in the night. Recent observations have shown that in one of the most important forms of Bright's disease, the quantity of urine that is passed in the night time far exceeds that which is passed during the day.

The diagnosis very often depends upon knowing not merely the twenty-four hour quantity of urine, but, also, upon knowing how much work the system has been doing, and how much work the kidneys are capable of doing. But the only estimations which are really necessary, in the vast majority of cases, are the estimation of the quantity of urine and the estimation of the principal organic normal solid, urea, which is the final product of the metabolism of the nitrogenous elements of the body. This estimation of the urea is an exceedingly simple matter. I have found this little apparatus of Dr. Squibb's to be by far the simplest and most satisfactory. A full description of the method of performing the operation is given upon the papers that come with the apparatus, and the whole process requires but a few minutes, so that the quantitative estimation of urea is not nearly as difficult as it used to be. The importance of the estimation of the twenty-

four hour quantity of urine is very great; for instance, we have some general diseases which are characterized by a permanent and large increase in the daily quantity of urine. The most common of these are the two forms of diabetes, diabetes mellitus and diabetes insipidus. There is no trouble in making a diagnosis of the former disease, as we have a large quantity of urine with a very high specific gravity due to the presence of grape sugar. But there is difficulty in making a diagnosis of diabetes insipidus, because we have so many other conditions in which the urine has practically the same characteristics, namely, — urine passed in very large quantity in twenty-four hours and of very low specific gravity. In diabetes insipidus where the symptoms resemble very much those of diabetes mellitus, loss of flesh and the wasting of the tissues, the urine is passed in large quantity and of low specific gravity, although if the normal solid matters be estimated, we will find the twenty-four hour quantity increased. The daily amount of urine is from 3,000 to 3,500 c. c. or more, and we will find the urea running up to eighty or ninety, or even one hundred, grammes in twenty-four hours, the normal amount being from 25 to 35 grammes, thus showing a very large increase. The daily quantity of chlorine also reaches from twenty to thirty grammes instead of the normal of nine or ten grammes. Urine of similar general character, large quantity and low specific gravity, we may find in health, and, also, in many nervous affections existing temporarily, but in these cases the twenty-four hour quantity of solid matters will not be increased, but may be diminished.

A small quantity of urine habitually is of less importance from a diagnostic point of view than a large quantity. We are all familiar with most of the existing diseases that are characterized by a small quantity of urine. Some persons in health pass habitually very small quantities of urine, much smaller than they should, so that instead of eliminating 1,500 c. c. (three pints) as they should, the quantity is frequently diminished to 900 or 1,000 c. c. (about two pints) in twenty-four hours, and the specific gravity reaches 1,030 instead of 1,021. This condition, if long continued, may cause irritation of the kidneys. The most common diseases, characterized by an abnormally small quantity of urine, are acute diseases. It is rarely necessary to resort to an examination of the urine in the ordinary febrile cases, but there are some in which the testing of the urine is of a good deal of importance. These are the acute diseases attended with an exudation, as pneumonia, peritonitis, etc. In these diseases, when the effusion is increasing, the chlorine steadily diminishes from the urine until it may entirely disappear, and it reappears with the beginning of the absorption of the exuded fluid; so that in a pneumonia we can determine the exact time at which the absorption of the exudation from the lung tissue begins more accurately by the reappearance of chlorine in the urine than we can by the physical examination. In peritonitis, in addition to the absence of chlorine, the small quantity and the concentration of the urine, we find an enormous increase of the indoxyl. These peculiarities are naturally of greater importance to the urinary examiner, who does not see the patient, than to the visiting physician who does. Therefore, it is often of value to me in order to enable me to distinguish between one kind of fever and another. From a case in which the quantity of urine is habitually below normal, we can, of course, eliminate at once any

disease which is characterized by a constant abnormal increase.

There is one other condition, so far as the quantity is concerned, which I wish to mention briefly, called anuria. That condition is where there is almost no urine passed. Under this head are included those cases in which only three or four ounces are secreted during two or three days, and I have known almost total suppression of urine to last for a longer time, so that only a few ounces may be eliminated in the course of two weeks. We find that condition of almost total suppression of urine in many diseases toward death, in which case, of course, its existence is of really no diagnostic importance. We sometimes see it in cases of acute nephritis, where only a few ounces may be secreted in twenty-four hours. In the last case of severe acute nephritis which I saw, only four ounces of black urine were passed in forty-eight hours.

Where there is an obstruction to the flow of urine through the urinary passages, we may have a condition resembling anuria. This may occur in some surgical cases, as for instance, where there is a tight urethral stricture. There is another condition which is called obstructive suppression, of which I have seen, perhaps, half-a-dozen cases. These are due to the compression of the urinary passages above the urethra so as to permit of only a comparatively small quantity of urine passing into the bladder. A very remarkable case of this kind was reported a few years since by Dr. J. W. Farlow,² in which compression of both ureters was caused by a malignant growth of both Fallopian tubes, and in that way the calibre of both ureters was so much constricted as to be at times completely occluded. At one time a period of twelve days elapsed without any urine being secreted. Obstruction of the ureters by calculi is, perhaps, the most common cause of obstructive suppression. As a general rule, the urine of obstructive suppression is characterized by being passed in small quantities, of very pale color, and very low specific gravity, and you may or may not find evidence of kidney disease by the microscopical examination of the sediment.

Original Articles.

THE ACTION OF RATTLESNAKE VENOM UPON THE BACTERICIDAL POWER OF THE BLOOD SERUM.¹

BY CHARLES B. EWING, M.D.,
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AN apology would be necessary for introducing a subject of this character, on the present occasion, if it were not that the loss of life from poisonous reptiles has become so great that it calls forth the best effort of not only the military surgeon but of medical men generally, to lessen it.

The mortality in India alone reaches the alarming figure of 20,000 persons annually, hence it was not a strange coincidence that it should have fallen to the lot of the British Medical Service, lead by Dr., now Sir, Joseph Fayrer, to perform the pioneer work in that part of the globe.

While much has been written upon this subject in

general; very little has been said or done in the special line to which this paper relates.

At Professor Welch's suggestion we conducted a series of experiments in the pathological laboratory of the Johns Hopkins University during the spring of 1893, having for their purpose the determination of the action of rattlesnake venom upon the bactericidal power of the blood.

Dr. Welch's attention was directed to the investigation of this subject by Dr. Weir Mitchell. Drs. Mitchell and Reichert demonstrated that the poisonous properties of rattlesnake venom depend upon the presence of proteid substances. These investigators were the first to demonstrate the existence of the so-called toxic albumins.

In their monograph on the subject, as well as from previous observations, it was apparent that the animals killed by rattlesnake venom decomposed with great rapidity, indeed with such rapidity, that Dr. Formad, who contributed an appendix upon the pathological anatomy of animals dead of rattlesnake venom, believed that there was evidence of the spontaneous generation of bacteria.

Dr. Formad thought it impossible for the bacteria to make their way into the circulation and multiply so quickly. This seemed so improbable to Professor Welch that he suggested to Dr. Weir Mitchell the importance of having this point worked up. Dr. Mitchell kindly gave us a certain amount of poison. We were, however, fortunate enough to obtain a live rattlesnake of the diamond species, known as the *Crotalus Adamanteus*, from which fresh venom was obtained and used in preference to the dried poison supplied us.

It will not be out of place to recall briefly that the order *Ophidia*, of the sub-class *Reptilia*, is divided into three sub-divisions: (1) the *Ophidii Colubriiformes*, or innocuous snakes; (2) the *Ophidii Colubriiformes Venenosi* or poisonous colubrine snakes; (3) the *Ophidii Viperiformes*, or viperine snakes, poisonous.

To the last sub-division, viperine snakes, belong the *Crotalidæ*, or rattlesnakes, called by Fayrer "pit-viper," being distinguished from the *Viperidæ* or vipers proper, by possessing a pit or depression between the eye and the nostrils in the loreal region; a triangular broad head and thick body of variable length.

The *crotalus* is distributed widely over the globe, and all are terrestrial except in India, where quite a number of genera are arboreal; these, however, lack all semblance to the horny scales or rings at the tip of the tail, known as the "rattle," except in the species called *Halys*, where the tail terminates in merely a rudimentary horny spine.

It is of interest to note that the Indian *crotalidæ* are not so venomous as their American congeners, though Asia has a very deadly species known as the *Calloselasma Rhodostoma*, resident in Java and Siam; while South America is represented by the well-known *Jararacca* or *Craspedocephalus Braziliensis*. Australia and Africa likewise contain ophidians of this class but they are little known.

The *crotalidæ* of the United States are represented by ten species and three sub-species, all being equally poisonous, so far as we now know. Of these the *Adamanteus* has three sub-species, one of them, the *Adamanteus* proper, found in this country, extending from North Carolina to Florida; a second, the *Atrox*, resident in the Indian Territory and Texas, also throughout that stretch of country extending to Sonora and

¹ From the proceedings of the Washington meeting of military surgeons.

² Boston Medical and Surgical Journal, April 4, 1889.

southern and lower California; and a third called *Scutalatus*, known only to Arizona.

We had in view in the first place to test the question as to whether the blood of animals killed by rattlesnake-poison had lost any of its germicidal power.

We used Dr. Weir Mitchell's noose for securing the snake and with a sterilized saucer thrust into the mouth of the animal, we collected the venom. In this way we had no difficulty in getting from 0.5 to 1 c. c. of nearly clear, slightly straw-colored fluid, quite sufficient for our purposes. This was diluted with an equal quantity of sterilized physiological salt solution, and 0.25 to 0.5 c. c. of this mixture was inoculated subcutaneously under antiseptic precautions, the dose varying according to the time we wished the animal to live. This was usually from one-half to one hour and a half, but in one or two cases, three hours after the injection.

The injections were in all cases given subcutaneously, sometimes beneath the skin of the abdomen and at other times in the groin. The lesions differed somewhat according to the site of injection. When made beneath the skin of the abdomen, there were most extensive peritoneal hæmorrhages, whereas, when the injections were made in the thigh, these lesions were less extensive, although not absent; here the most striking effect noted beside the deeply discolored integument surrounding the point of injection, were the underlying hæmorrhages into the muscles.

The important lesions were these: most extensive hæmorrhage, with disintegration of tissue and actual necrosis of tissue, for a wide distance around the point of inoculation, with ecchymosis in other parts of the body, particularly in the serous membranes. Another point which served our purpose admirably, was that the blood does not coagulate after death or coagulates only feebly and after a long interval. We therefore had no difficulty in collecting a sufficient amount of the fluid blood, and we did so by withdrawing the blood in less than a minute after the animal breathed its last. We exposed the heart at once, and with sterilized instruments made an incision in the right auricle, and with a sterilized pipette we aspirated from the right heart; and then passing the pipette down into the abdominal vena-cava, we secured sometimes as much as seven or eight cubic centimetres of blood. This blood was collected in a sterilized test-tube and put in the refrigerator. After twenty-four hours, the red blood corpuscles had settled; sometimes a small, soft, dark coagulum had formed, and there was a layer of clear serum.

The usual statement is that the blood does not coagulate. It looks as if it did not coagulate, and as though there was merely a sedimentation. But there is in fact an extremely thin clot, which does not retract from the sides of the test-tube. It is an extremely viscid, sticky coagulum, which adheres to the platinum needle inserted into it. We pipetted off after twenty-four hours, the clear serum, usually collecting 0.5 to 1.5 c. c. The organisms which were used to test the germicidal power of the serum, were the bacillus coli communis and the bacillus anthracis. Professor Welch selected the bacillus coli communis because that is an organism which is normally present in the intestine and also one with which he had experimented upon with normal serum. He took the bacillus anthracis because that is a classic organism in regard to the action of serum. The results were uniform and striking. As a rule, we made a control experiment with normal serum; thus we killed a healthy rabbit and withdrew the serum in

the same way, collected the same quantity, and inoculated at the same time a parallel control, tubes with the bacteria to be tested. The cultures were twenty-four to forty-eight hour cultures. Our bacillus anthracis was obtained in suspension from the spleen of an animal recently dead of anthrax. We wished to obtain the anthrax bacillus free from spores, and thought it better to take it fresh from the animal. Similar results were obtained also with twenty-four-hour anthrax cultures grown at room temperature. We made a suspension in salt solution of the organisms, and inoculated a known quantity, one to two platinum loops of the suspension, into the serum tube. Then we made roll cultures.

The following tables, drawn up by Professor Welch, represent only a certain number of our experiments, and are much abbreviated for the sake of clearness.

BACILLUS ANTHRACIS.
Normal Serum.

No.	No. bacilli inoculated.	After 24 hours.	After one week.
1 A	485	0	0
1 B	8,512	0	0
1 C	210	0	0
2 A	5,292	0	0
2 B	1,628	0	0

Venom Serum.

No.	No. bacilli inoculated.	After 19 hours.	After 24 hours.
1 A	8,512	Countless.	....
1 B	25	....	3,233
2	68	....	250,000
3	3,292	Countless.	....
4	3,292	Countless.	....
5	3,292	Countless.	....

BACILLUS COLI COMMUNIS.
Normal Serum.

No.	No. bacilli inoculated.	Immediately.	After 24 hours.	After 48 hours.	After one week.
1 A	250,000	256	157	Countless.	Countless.
1 B	175,000	188	50	Countless.	Countless.
2 A	29,161	53	0	0	0
2 B	3,150	18	0	0	0
3	9,990	13	38	625	Countless.
4	84,947	238	0	0	0

Venom Serum.

No.	No. bacilli inoculated.	Immediately.	After 22 hours.
1	800,000	1,077	Countless.
2	3,150	6	26,000
3	16,560	32	Countless.
4	9,990	35	Countless.
5	84,947	284	Countless.
6	84,947	231	Countless.
7	84,947	182	Countless.

With the bacillus coli communis, it will be observed that in the case of normal serum, we inoculated 250,000 bacteria. Immediately afterwards, there were 256 colonies; after twenty-four hours only 157 colonies. In other words, there was not only no development, but an actual diminution in the number of bacteria. If the organisms are not all killed at the end of twenty-four hours, the germicidal power ceases, and those which remain multiply. After forty-eight hours, the colonies were countless. In the second experiment, we inoculated 175,000 bacteria, which represented 188 colonies immediately. After twenty-four hours, there were only 30 colonies, and in forty-eight hours they were countless. Taking a smaller number of bacteria, 29,161, there were immediately 53 colonies; after twenty-four hours none: after forty-eight hours none; after one week none. In other words, in twenty-four hours the normal serum had destroyed 29,000 bacteria.

These experiments were uniform in results, and point to one conclusion, that the blood of rabbits killed in one-half to three hours after subcutaneous inoculation with rattlesnake venom, has lost its germicidal power. This is of considerable interest, for it is an indication of a very profound alteration in the blood. This germicidal power of the blood is one of very great significance, on which many of the modern theories of immunity depend.

It is of special interest to ascertain under what conditions the germicidal properties of the normal blood serum are at their highest, and in what way these properties affect the composition of the blood.

The principal workers in this field have been Von Fodor, Nuttall, Wassermann, Kitasato, Buchner, Ogata, Hankin and others. Von Fodor's work had reference to the composition of the blood, and was intended to show that arterial has a more destructive action on bacteria than venous blood, and also that fresh blood has a more destructive action than that which has been standing for some time. It was also found that the germicidal power of the blood was weakened in an atmosphere of oxygen or carbonic acid gas, but the removal of gasses from the blood had no appreciable effect.

A series of experiments showing the effect of moving and stationary blood upon bacteria by means of small globes containing blood, some of which were kept in constant motion and others quite stationary, resulted in no appreciable difference being observed.

Temperature affected very materially the bactericidal power of the blood, which increased with the rise of temperature from 88° to 40° C., and then gradually diminished with the fall.

Von Fodor is of the opinion that the individual predisposition of an animal to an infectious disease stands in close relationship with the germicidal power of the blood. A second series related to the influence of drugs on the power of blood to destroy germs.

Hydrochloric acid had no effect; tartaric acid and quinine, respectively, produced a marked decrease. A slight increase was produced by common salt and carbonate of ammonium, but a more marked effect by the phosphate of sodium, while the carbonate of potassium and sodium showed a very remarkable increase. From these experiments the deduction was made that the bactericidal power of the organism was raised by any drug which increased the alkalinity of the blood. The third series verified the conclusions regarding the alkalization of the blood. Of eight rabbits inoculated with

anthrax all died, whilst of nineteen which had been previously injected with solution of soda only three died. A majority of the sixteen remaining were perfectly free from disease, only a few being fatally affected.

Up to this time, however, the doctrine of phagocytosis as advanced by Metchnikoff held sway, when Nuttall struck the first severe blow to this theory. He, in his most excellent inaugural dissertation at Göttingen in 1890, showed that the destruction of virulent bacteria in the blood of animals by the leucocytes, was not at all essential, but that the serum of blood free from all cellular elements, possessed this power to a degree equal to the blood in its entirety.

Nuttall's work is graphically shown in some twenty-eight tables in his "Beiträge zur Kenntniss der Immunität." He here proves very conclusively, that in the blood bacteria presented marked evidences of degeneration before being taken up by the wandering cells, or leucocytes. It was also seen that the bactericidal power of the blood of different animals varied, and that while in some certain bacteria were promptly killed, in others these were simply restrained for a time or not affected.

Buchner, Lubarsch, Nissen, Stern and Prudden have practically verified these observations. Buchner, particularly, in his experiments upon dogs and rabbits, verified the findings of Nuttall, but went even further and proved that the bactericidal power of the blood of these animals did not *at all depend* upon the cellular elements, but resided in the clear serum which separated from the clot, after the blood had stood a while in a cool place. He also demonstrated that the germicidal action of blood and serum were destroyed by exposure for an hour to 55° C. or by heating to 52° C. for six hours, or to 45.6° C. for twenty hours.

Alternate freezing and thawing did not destroy the bactericidal power of the serum, but it was diminished or completely checked by dialysis with distilled water, or by extreme dilution with the same. He preserved the anti-bacterial action of the serum by making an equal dilution with a six-tenths to seven-tenths per cent. of sodium chloride solution, and was led to believe that the activity of the serum was greater alone, than when the cellular elements of the blood were present, hence he concluded that the active element is a living albumin, having as an essential constituent an alkaline base. This albuminoid substance is thought by Hankin to be identical with his "globulin" isolated from the spleen and lymphatic glands.

According to the views of these experimenters, the germicidal power of the blood resides in the serum alone, and phagocytosis is but a secondary process, the leucocytes taking up the bacteria only after they have been rendered inert by the germicidal power of the serum of the blood and certain other fluids of the body. For our purpose, however, it is not necessary to insist upon the humoral as opposed to the phagocytic doctrine of immunity. All that concerns us is the recognition of the bactericidal power of the blood serum under certain conditions.

The loss of this normal germicidal power helps us to explain the varying rapidity with which post-mortem decomposition sets in. It is well known that persons dead of different diseases decompose with varying degrees of rapidity. We cannot explain this differing rapidity of decomposition simply by variations in temperature, for under the same external conditions

one body will be decomposed in comparatively few hours and another may remain undecomposed for several days. We selected the animals killed with rattlesnake venom because it is well known that they decompose with great rapidity. The bodies of human beings killed by snake venom are also said to decompose with great rapidity.

The results of our experiments furnish a satisfactory explanation of this phenomenon. The blood at the time of death and even before death, has lost all, or nearly all, power of resisting the invasion and multiplication of certain bacteria, so that the bacteria of putrefaction which are normally present in the intestine, develop with astonishing rapidity and even before the animal is cold, produce this wonderful rapid decomposition. Our experiments are also suggestive as regards certain secondary and mixed infections. The toxic proteids of snake venom belongs to the same class of poisons as those formed by toxic bacteria, such as the bacillus of tetanus, of diphtheria, etc.

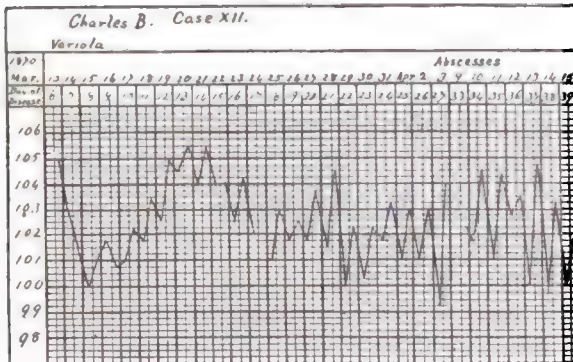
It is easy to suppose that these infectious diseases may cause a diminution of the germicidal power of the blood against secondary invaders, of which common examples are the pyogenic bacteria present often in our mouths and intestinal canals, and which in an individual whose resistance is lowered by a loss of the germicidal power of the blood, may grow and multiply. In other words, we can understand better the causation of many of these secondary infections.

VARIOLA.

BY S. G. WEBBER, M.D.

(Concluded from No. 19, p. 459.)

CASE XII. Charles B. had had his fingers amputated on account of an injury, and the wound was still suppurating when he was received into the hospital. The eruption was quite thick on his face, arms and legs. While pustular on the face, it was flat and bright red on the arms and legs, surrounded by an



areola. It then became confluent on the face, nearly so on the arms and legs, and became purple. The purple color increased in intensity for two or three days; he trembled much and had chills, with a rather bad-looking tongue. He was indifferent to what passed around him, but seemed to be sensible and conscious.

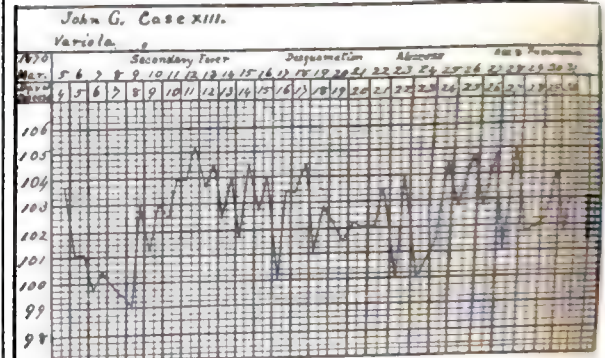
The curve shows that the temperature first fell from

¹ The cases on which these observations are founded were under my care in the winter of 1869-70 at the Boston Small-pox Hospital. They formed the basis of a paper which was read before the Medical Observation Society, but has never been published. Much of that paper is here reproduced.

the sixth to the eighth day; then the secondary fever began, and the temperature rose to 105.4° on the thirteenth and fourteenth days, then fell and rose again during the desquamation, later rising when abscesses developed, which kept him in the hospital till the early part of May.

The next case was complicated with pneumonia.

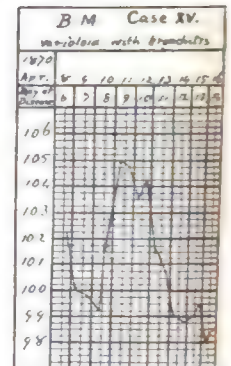
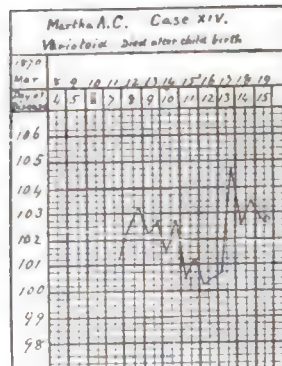
CASE XIII. John C., age twenty-seven, said he had been vaccinated. The scars were not found. The eruption was semi-confluent. He did well, and after



sixteen days his face was nearly clear. He then had a succession of abscesses; between March 22d and April 17th twenty-three or more were opened, and several opened spontaneously.

March 26th. The sputa was rusty-colored and very tenacious. There were sibilant râles over both backs, but no mucous nor crepitant râles could be heard. At the base of the right back the respiratory sounds were diminished, and there was a diminution of resonance. By April 6th these symptoms had disappeared, and he recovered.

The next case was fatal on account of the complication of pregnancy.



CASE XIV. Martha A. C., age thirty-one, said she had been vaccinated ten to fifteen years previously. She noticed the eruption first on her abdomen; the next day she was well covered. The eruption was not well developed, and was accompanied with considerable erythema. She said she had had her catamenia two weeks before. She seemed to be doing well, though the temperature was rather high on the eighth and ninth days for varioloid, yet it was falling, not rising.

The attendant thought she was pregnant when she came in, but she denied it. On the twelfth day labor pains appeared, and then she said she was about

seven months advanced. No advance was made until the fifteenth day. She vomited a dark liquid during the night, and passed blood at stool. The labor caused the temperature to rise.

Her child was born in the forenoon, entirely free from any eruption. The uterus contracted well. The pulse was very feeble, and in the afternoon she died.

CASE XV. B. M. This was a case of varioloid. The curve of temperature is given to illustrate the distinction between the rise caused by bronchitis and the secondary fever of variola.

The next two cases were interesting in that the patients had all the symptoms of variola without the eruption.

CASE XVI. The attendant at the hospital had the care of the first case October 26, 1869. November 6th, just eleven days after, he was attacked with severe pains in the loins and fever; chills very slight, if any, tongue dry, pulse 90. The next morning he was feverish; pulse 96, eyes congested, temperature 102.6°, evening 102.6°. The third day he was better; pulse 84, temperature 101.6°. The fourth day he was nearly well.

CASE XVII. Beginning on the evening of November 7th, and lasting until November 9th, I had an attack of headache, chilliness and feverishness, which obliged me to lie down whenever I had the opportunity. The pulse and temperature were not taken.

In both these cases there was probably the variolous poison acting, but not strong enough to produce the fully-developed disease.

In both these cases there is seen, probably, the effect of the variolous poison in systems nearly protected, and these may be compared to the sore throats noticed during epidemics of scarlet fever.

The treatment in all the cases was chiefly supporting. Stimulants were given freely when it seemed necessary. In each case, that amount was prescribed which at the visit seemed sufficient to have marked effect; but a general order was to give more in case there seemed to be call for it. The sudden fall of temperature after the ingestion of large amounts of rum in several cases would favor the view that it was beneficial. It was also ordered that when the patient's breath had the odor of alcohol the dose should be diminished or omitted. Milk was given freely, a mug being left by the bedside for the patient to drink as he desired. In most cases the patients preferred the milk to water for a drink. The amount of milk thus drank was occasionally very great. One patient drank at the crisis about seven quarts in twenty-four hours; another took nearly five quarts in twelve hours. The most reasonable explanation of this great consumption of milk may be found in the great drain on the system caused by the filling out of the large number of pustules and the consequent exhaustion, which called for the means of repair. Solid food was given only after the tongue had become clean, though eggs, raw or soft-boiled, were allowed before this.

The only local application to the face was the following:

R Acid. Carb. gr. v
Glycerine
Aque ss 3i

This was applied freely several times a day, so as to keep the pustules and crusts moist. The application was used as soon as the eruption became pustular, or sooner. Whenever this was faithfully used it had the

best effect in preventing itching, smarting and burning. In only two or three cases was there any inclination to scratch or rub the face, and only once, when the wash had not been used often enough, was there any complaint of discomfort. In nearly all cases, when asked, the patients said there was no uncomfortable sensation.

The normal course of the temperature has already been noticed in both variola and in varioloid. In eight cases there was well-marked increase of temperature during the period of desquamation. In six cases there was an increase at that time, but there were also abscesses or inflammation which rendered the cause of the increase obscure and gave it a different character. Dr. Leo first attracted attention to this fever of the desquamation stage. Sometimes there is only one day of low temperature between the secondary fever and this, but there is a marked rise as compared with that interval, however short it may be and the few days next succeeding.

There is a difference observable in the rise of the temperature according to the character of the inflammation causing it. In abscesses the variation between evening exacerbation and morning remission is quite great; but in inflammation affecting the lungs the temperature is maintained more steadily at a high figure.

The thermometer then is of value not only as aiding in the diagnosis between variola and varioloid, which could be made from other symptoms; but is also a guide to judging of the condition of the patient, showing early that there is a new morbid process setting in. Sometimes it is the first notice given of the occurrence of suppuration ending in abscess, and if the patient is inclined to conceal such an accident, the rise in temperature would lead to an examination which would reveal the cause. Also the character of the rise would show whether there was a probability that the lung was becoming affected or whether there was merely an abscess forming.

The thermometer is also valuable as a means in forming a prognosis and is invaluable as a means of setting the physician's mind at rest in regard to the welfare of the patient. If the attendant can be trusted the physician may leave his patient longer unvisited with safety, for the thermometer will surely show if there is reason for sending for him. So long as the temperature is low there is safety and no complication is likely to arise except hæmorrhage, which gives unmistakable notice of its presence.

There were received into the hospital 34 patients with variola and varioloid, two with measles and two with other eruptions. Of the 34 patients 21 had variola, 11 had varioloid and in two cases there might be doubt, one entering after desquamation had advanced considerably, which was probably a case of variola.

These cases may be tabulated thus:

Variety.	No. of Cases.	Deaths.	Mortality.
Confluent	7	2	28.5%
Semi-confluent	2	0	..
Hæmorrhagic	4	3	75
Corymbosæ	1	0	..
Discrete	6	1*	16.6
Doubtful	2	1†	50
Varioloid ‡	11	0	..
Total	33	7	21.21

* From pyæmia. † From pregnancy. ‡ Cases xv and xvi are not included in this table.

In five cases the duration of the period of incubation was well marked. In one it was ten days, in one it

was eleven days, in two it was twelve days, in one it was probably eleven or twelve days.

In eleven cases the eruption was seen two days after the first feeling of discomfort; in twelve, three days after; in eight, four days after; in one, in less than two days; in two cases the date was not fixed, and in one case there was no eruption.

Of those cases whose duration could be accurately determined varioloid lasted from 13 to 29 days, there being one case continuing each of the following periods 13, 16, 17, 19, 20, 21, 23 and 31 days, and two cases 15 days. The cases of variola which recovered lasted one each during 31, 32, 41, 45, 56 and 60 days two cases each 27, 40 and 42 days. The fatal cases died, one in less than five days, one in 8, 9, 14 and 16 days, and two in 15 days.

Except in the hæmorrhagic variety, which is much more quickly fatal, the date of greatest mortality and danger is between the fourteenth and sixteenth days.

Chills which are mentioned as a prominent symptom at the commencement were absent in many cases, and in most of the others were so slight as not to be mentioned by the patient unless questioned in regard to that point. Later in the disease during the suppuration and still more during desiccation there were frequently severe chills.

In only one case which recovered, was there entire absence of salivation; usually this symptom was well marked.

In three cases there was pulmonary complication; in only one showing decided signs of pneumonia; the other two being probably only bronchitis and pleurisy.

Vomiting at the beginning of the disease occurred in both severe and mild cases, being, however, rather more protracted in severe cases. It did not seem to have much value for prognosis.

In two cases there was a pustule on the conjunctiva and in one case during the occurrence of abscesses in other parts there was a collection of pus under the conjunctiva.

In four cases variola occurred after reported vaccination. In one of these the patient said the vaccination did not take well, in another the scars could not be distinguished with certainty, in two cases the examination was not accurate enough to state positively what was the condition of the scars. The other cases of variola had never been vaccinated. A winter's experience in a small-pox hospital during an epidemic would probably cure one of any prejudice against vaccination. In only two cases of variola was it probable that vaccination may have been well performed, and both of these were mild cases and recovered. Comparing the severity and duration of the disease in the 15 who had been vaccinated and the 19 who had not, or had been only imperfectly protected, there can be no hesitation in regard to a decision in favor of vaccination.

A few reflections occur, as I now look over this paper, in regard to the improved sanitary condition and care of the City as compared with 1870. Then, a patient with the scabs still on his face could ride in a public car without giving rise to any inquiry, scarcely to comment. A patient now would not be sent to the hospital alone, nor would such an one wander about the streets trying to find it, as in case VI. And it would not now be possible for so many to take care of their friends until they died with the disease, if doctors did their duty.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY THE SUBCUTANEOUS USE OF THE CHLORIDE OF GOLD AND SODIUM WITH THE IODIDE OF MANGANESE.

BY WM. S. BOARDMAN, M.D., BOSTON.

WE have read and heard so much about new remedies and modifications of new remedies for the treatment of phthisis, that now to many the subject fails to excite an interest.

The methods of treatment are too numerous to mention. One is almost startled by the list of drugs and methods proposed, in reading Solis-Cohen's article on "Tuberculosis," in "Hare's System of Practical Therapeutics." Yet there must be something beneficial in these remedies, even if there is nothing specific.

The brilliant methods of Koch, dimmed by the noxious elements in his tuberculin and brought to a glow again by the researches of Klebs and Hunter, are undoubtedly more for good than anything hitherto proposed. Although we seem so near the desired result, it has not yet been obtained in the ideal that was first conceived; nevertheless, it behooves us to make the most of what we have, while striving for something better.

From the earliest time, the attempt has always been made to combat the marasmus of phthisis by dietetic and hygienic measures. How slow and uncertain a procedure it has been is only too well known to us all. If in any way we can aid the process of nutrition and maintain or increase the strength of the patient, a great deal will be done towards staying the disease, if not directly tending to a cure.

One mode of treatment that has been tried considerably yet spoken of by comparatively few writers, is the subcutaneous use of a solution in glycerine, of the chloride of gold and sodium with the iodide of manganese. In March, 1891, an article in the *Medical Record*, by Dr. J. B. White, extolled this combination as a treatment for phthisis, and cited a number of cases to show the beneficial results obtained. Another article in September, 1892, by the same author, appeared to supplement and confirm the results of the first paper, being written in a very earnest and pleasing manner. As the combination of the chloride of gold and sodium with the iodide of manganese, is, under ordinary circumstances, likely to result in the formation of a precipitate, the author of the above-mentioned articles was asked to state the method of preparing the solution. Since the process was not given and the injection fluid could only be obtained in New York, it was thought to be of sufficiently scientific interest to the profession to have an analysis of Dr. White's preparation; and Mr. Wm. C. Durkee, Ph.G., kindly consented to undertake the chemical work with this result.

"The proximate chemical examination of the injection fluid is as follows. It has a dark-amber color, with a specific gravity of 1.260, a styptic taste and a syrupy consistency.

"According to Dr. J. Blake White's statement, each drop should contain the equivalent of one-fiftieth of a grain of the chloride of gold and sodium, and one-fiftieth of a grain of the iodide of manganese, that is, each drop should represent one-twenty-fifth of a grain of the combined salts.

"He does not mention the method of obtaining the drop, whether from the bottle or a medicine-dropper;

and although changes in the viscosity of the liquid owing to the temperature, the rapidity with which the drops are formed, and the shape of the material from which the drop falls largely govern the size, it was assumed that a drop from the original five-cubic-centimetre bottle, at about 70° F., and forming at a speed of one in two and a half seconds, would be about the size usually obtained and probably intended by the quoted statement.

"Several careful weighings of ten-drop quantities of the liquid were made and the drops found to average 77 milligrammes each, and supposably contained one-fiftieth of a grain (.0013) of U. S. P. strength of chloride of gold and sodium, and the same quantity of iodide of manganese, or 169 mg. of each in 10 gm. of injection.

"Ten grammes of the fluid were found to contain .01737 gm. of metallic gold, equal to .05352 gm. chloride of gold and sodium U. S. P., or about one-third the amount claimed. The liquid is composed mainly of glycerine, and contains free iodide, iodine in the form of iodate (also as iodide), chlorine, sodium, potassium and manganese.

"As the method of preparing the injection fluid recommended by Dr. White was not made public, the following process has been devised, which yields a solution containing the ingredients he has reported as useful and of the strength he recommends. Take of

Gold and sodium chloride, U. S. P.	1.69 gm.
Manganese sulphate	2.44 gm.
Potassium iodide	4.62 gm.
Diluted alcohol	10.0 c. c.
Glycerine	of each a sufficient quantity.
Distilled water	

"Dissolve the gold and sodium chloride and one gramme of potassium iodide separately, in sufficient glycerine to make each solution weigh 25 gm. using only a very gentle heat, if any; when cold mix the two solutions. Dissolve the manganese sulphate in sufficient distilled water to make 10 c. c., and 3.62 gm. of potassium iodide in sufficient diluted alcohol to make 10 c. c.; mix the two solutions, and allow the containing vessel to stand in powdered ice for several hours, to thoroughly precipitate the potassium sulphate. Then decant 10 c. c. of the clear liquid into 40 gm. of glycerine; evaporate on a water bath until the total weight is reduced to 40 gm., and add glycerine to make 50 gm. Mix this solution with the solution of gold and sodium chloride, and keep in amber glass-stoppered bottles. Each 77 mg. (about one drop) contains the equivalent of 1- $\frac{3}{5}$ mg. (one-fiftieth of a grain), of gold and sodium chloride and the same quantity of manganese iodide."

The injections were given in the forearm, upper arm and subclavicular region by an ordinary hypodermic syringe.

The solution prepared has been used in the manner advised by Dr. White, the initial dose usually being one drop (equal to one-twenty-fifth of a grain of the combined salts of gold and manganese) diluted with a few drops of a one-per-cent. solution of carbolic acid, and increased only as the constitutional disturbance remained at a minimum or ceased to appear after several doses.

In some patients the reaction appeared within two hours — as headache, backache and general malaise —

¹ It is best to prepare this chemical or to use an article which is known to be of full strength, as market samples were found to contain less gold than the labels indicated.

lasting twenty-four to forty-eight hours; in others it was but little marked and disappeared within one or two hours after an injection.

The pulse has been found to be full and slow with subnormal temperature in some, while in others the pulse was increased in rate with a slight rise in temperature.

The local effect varied, in some the solution caused considerable inflammation, in others the injection was only marked by an induration and slight tenderness about the puncture. It seemed to depend upon the amount of loose connective-tissue present and the individual susceptibility to irritation.

Cough-mixtures, tonics and hygienic measures have also been made use of as opportunity permitted.

One thing was observed quite generally, as noticed by another writer — within two weeks or thereabouts after beginning the injections, the appetite was increased, so much as to cause the remark of the patient to the effect.

The cough and expectoration in some were lessened, in others not appreciably affected. Night-sweats usually ceased. The general appearance and feelings of the patients improved, and they did not hesitate to declare themselves greatly benefited.

On making a physical examination of a patient after a few injections, the former condition of things may be somewhat aggravated. At such a time I have found the signs more marked, especially the auscultatory signs; later the results were variable.

The theory that the preparation of gold is eutrophic, while the manganese is anti-æmic, seems to be well borne out. That an improvement can be secured in some cases I feel quite confident, but as to complete and permanent recoveries I am not so certain.

The exact way in which these injections affect the pulmonary tissue is more or less a matter of conjecture; nevertheless, the remedy appears to act as a tonic to the waning strength of the patient, also to cause a certain amount of irritation and inflammation around the foci of infection (as sometimes shown by bloody sputum after a large dose), which may eventually result in an encapsuling of the pathological portions, or their replacement by dense fibrous tissue.

However, be it as it may, the subcutaneous use of the chloride of gold and sodium with the iodide of manganese certainly improves the majority of patients subjectively; and if a cure does not result, they are at least in a most promising condition for treatment by modified tuberculin or its allied products. The strongest argument in favor of this treatment is the fact that when properly given no injury can be done, while there is great probability of an improvement if not a cure.

Appended is the full report of ten cases treated by gold and manganese, also the tabulated report of fifty-four cases, — some having been treated with gold and manganese, and some with Hunter's modification B. (kindly furnished by Dr. Trudeau of Saranac Lake, N. Y.).

In regard to the latter method of treatment, I will briefly state, that while not obtaining the results of Dr. Trudeau, I found much in its favor to warrant a further trial.

I have also been using for several months Klebs' Tuberculocidin, and so far with considerable satisfaction.

In connection with this paper, I wish to thank Dr.

E. M. Greene for his valuable services in the examination of sputum, and Dr. F. C. Cobb for laryngeal work, also Mr. Wm. C. Durkee, Ph.G., for most perfect chemical work, and Dr. E. O. Otis for kindly suggestions.

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

MENTAL DISTURBANCE IN EXOPHTHALMIC GOITRE AND MYXŒDEMA.

HIRSCHL¹ considers that exophthalmic goitre is not often complicated with a psychosis. Mania is the ordinary intercurrent psychosis in a simple typical case. If another form comes on in the course of exophthalmic goitre, it is usually a complication of a coexisting or complicating neurasthenia, hysteria or alcoholism rather than of exophthalmic goitre itself. The psychical type of a patient with exophthalmic goitre is often between that of a healthy person and that of maniacal exaltation with signs of degeneration. This is very common, but not constant. It has equal value with the three cardinal symptoms, and can aid the diagnosis in doubtful cases. The explanation of complicating mania and this psychic type is not forced if we regard the disease as due to functional or anatomical disturbances in the medulla. These conditions can then be ascribed to vascular paresis of varying degree in the cortex. By thus localizing the disorder in the medulla we can better explain the less frequent pulse and the anxiety in psychical depressed states.

Clouston's² study of the mental symptoms of myxœdema and the effect on them of the thyroid treatment is instinctive in showing that the contrast which marks their physical condition is equally evident in the mental states of these opposite affections of the thyroid. The general course of the mental disease in his cases was, first, slowness of mental action; secondly, emotional depression; next, irritability, morbid suspicion, non-resistiveness to outward causes of disturbance and general loss of control or maniacal outbursts; then, enfeeblement, with some exaltation in some cases; and, lastly, lassitude, hebétude ending in a condition of mental negation just before death. Two pathological facts that have lately come under his observation in regard to the cerebral cortex have impressed him deeply with the possible recuperative capacity of the cortical structure. One was a puerperal case of a few weeks standing—a *curable case by every clinical standard*—who died of maniacal exhaustion, and whose cortical cells were found in a state of marked and advanced degeneration, with spider cells and proliferated nuclei round the vessels and the neuroglia. If such degeneration is really curable, then we need not despair of recovery in many advanced cases of mental disease. The second fact is the actual cure of the prolonged mental enfeeblement of myxœdematous insanity by the thyroid treatment. He is convinced that we need not be hopeless of some day discovering remedies that will cure some of our cases of chronic melancholia, chronic mania and mild dementia, the pathological changes in whose brain cortex

he has often seen to be very similar to those found in one of his myxœdematous cases.

THE ALTERATIONS OF THE PERIPHERAL NERVES IN GENERAL PARESIS.

G. Datto³ reports autopsies of eight cases of paresis in which he carefully examined by several methods (both fresh and after hardening) the peripheral nerves (various cranial nerves and nerves of the brachial and lumbar plexuses). His general results were as follows: The alterations met with were those of parenchymatous neuritis in different degrees. This was constant in all the observations, the variations in the intensity of the pathological process in each, it is suggested, were possibly in relation to the intensity of the clinical symptoms. The cranial nerves were least affected in comparison with the others. The alterations were not systematic in their distribution, sometimes involving the motor, sometimes the sensory nerves; which fact in part explains, the author holds, the varied clinical syndromes of the disease. It also supports the view that we have in paresis a widely disseminated degenerative process affecting the most diverse organs of the nervous system.

Campbell,⁴ also, has made a careful study of the neuro-muscular changes in ten cases of general paralysis. He found the vagi extensively and strikingly diseased, more so almost than any of the peripheral nerves, and decidedly more than any cranial nerve. It is impossible to attach too much importance to the remarkable singling out of the vagi for such extreme degeneration in this disease. The changes in the mixed spinal nerves and their peripheral terminations appeared to be a combination of a parenchymatous degeneration and an interstitial or adventitious inflammation. This investigation confirms those of others in regard to the remarkable fact that the more peripheral the site examined in the mixed trunk the more extensive the degeneration will be found to be, and when the motor and sensory branches are reached it is more advanced and pronounced. The degree of degeneration of the spinal nerve roots was always considerable, but never extensive. The changes in the muscles do not, in the main, differ from those described in connection with other neurites. They are probably chiefly secondary effects of the nerve degeneration. It is extremely difficult to frame a distinct pathology for the neuro-muscular changes attendant on general paralysis, as there is so little knowledge of the precise nature of the pathogenic influence or factor which determines it; still, taking these changes in general paralysis separately into consideration and comparing them with those in other varieties of multiple neuritis, we find that there exists a close resemblance from an anatomical standpoint, and there is further one group with which the changes in general paralysis can be pathogenetically compared, namely, the *primary intrinsic toxic*; the secondary toxic, the purely toxic, the endemic, the rheumatic, and the cachectic or senile, being out of the question. This naturally does not refer to cases of alcoholic or syphilitic origin.

INEBRIATE ASYLUMS IN GERMANY AND SWITZERLAND.

Tilkowski⁵ visited and inspected five of these asylums: In Switzerland, Ellixen in Canton Zurich, Nüch-

¹ Jahrbücher für Psychiatrie, xii, 50.

² Journal Mental Sciences, 1894.

³ El Pisani, xiv, p. 169.

⁴ Journal of Nervous and Mental Diseases, April, 1891.

⁵ Jahrbüch. für Psych., xii, 1.

bern in Canton Bern, and Pilgerhütte in Canton Basel; in Germany, the Linberg group at Düsseldorf and the colony at Bielefeld. He gives the special rules of them all. The common principles involved are:

(1) All asylums in Switzerland and Germany, as at present constituted, rest on the general principle of voluntary entrance and voluntary exit. Forced detention is excluded. [In one Swiss canton, residents of the canton (St. Gallen) can be committed against their will for a definite time; but here inmates can be expelled for non-payment of dues or violation of the rules.]

(2) Insane, demented and epileptics are excluded from all. In Ellixon a certificate of sanity is required. If an inmate becomes insane, he is sent to an asylum.

(3) Total abstinence is required in all, even by the staff and attendants. Moderate use by drinkers is irritating and leads to a relapse, and small amounts do them harm. The attendants must abstain, for the example, and also because they eat at the same table. An inebriate does better if he sees no liquor, and the normal man can do without it. It is an error to think that sudden withdrawal of drink is dangerous.

(4) The fundamental principle is compulsory labor. Physical out-door work is best, and labor makes the cost of maintenance less.

(5) The food seems very liberal, abundant and strengthening, but not inviting.

(6) No drunkard can have money, visit taverns, or go out without leave of superintendent.

All the German and one Swiss asylum (Pilgerhütte) have a religious superintendence, which may aid in cure. Ellixon and Nüchbern are purely humanitarian. The religious ones take in depraved patients. In Lower Austria medical direction obtains, and forced detention. Hence the inmates need more watching. He concludes that all treatment must conform to medical and psychiatric science. Religious-moral influence is desirable, but chief stress is not to be laid on it. It is bad to mix the drunkard with the depraved. Principles 3 and 6 should be adopted by Austrian asylums also.

THE BOARDING-OUT OF INSANE.

The commissioners in lunacy for Scotland report* that during the year 1892 this class of patients has increased by 84, which means an increase of four per cent. and a corresponding diminution in the proportion maintained in establishments. At the same time the relative cost of the two methods has undergone no alteration. During the past six years the proportion of all pauper lunatics boarded out has oscillated between 23% and 24%, and it would almost seem as if this represented the limit of this method of providing accommodation. With regard to the possibility of the presence of insane individuals exercising a hurtful influence on the sane among whom they are placed, an authoritative statement is given by one of the deputy-commissioners who has had fifteen years' experience of this method.

"On reviewing," he says, "the private-dwelling system as a whole, my opinion is that there is no harmful influence on the guardians from the presence of the insane in their houses; and this is the verdict of a host of guardians to whom I have spoken on the subject. The care of the insane in private dwellings, according to my experience, has more frequently had an elevat-

ing than a harmful effect on the guardians and their surroundings, as it has raised the standard of both personal tidiness and of household order and cleanliness." While as regards the possible hardships attending the removal of patients to out-lying parts he remarks that this is more apparent than real, that the great majority of boarded-out insane are more accessible to relatives than patients in asylums are, and that even in the case of patients belonging to one of the suburbs of Glasgow who are boarded out in Islay, there have been no complaints.

THE IMPORTANCE OF MENSTRUATION IN DETERMINING MENTAL IRRESPONSIBILITY.

Krafft-Ebing⁷ reaches the following conclusions on this subject:

(1) It is useful to consider the mental soundness of women during menstruation from a medico-legal point of view.

(2) It is advisable where a woman is held on a criminal charge to ascertain whether the commission of the act coincided with the menstrual period; and by "period" is meant not only the days when there is actual flowing, but those before and after as well.

(3) It is best to advise examination of the mental condition when such coincidence is established. This is indispensable when there is a personal history of neuropathic defect, of mental disturbance at the time of previous menstrual periods, or when the nature of the act reveals any striking features.

(4) When the menstrual process exerts a powerful influence on the mental life of the subject the accused should be given the benefit of extenuating circumstances in the infliction of the penalty, even although there be no proof of menstrual insanity.

(5) When the offence or crime has, in a person whose mind is impaired, occurred during the menstrual period she must be declared irresponsible, for there is every reason to think the act due to emotional impulse.

(6) But individuals who by reason of menstrual insanity would benefit by acquittal on this ground should be considered as dangerous in the extreme and subjected during the times of the menses to close surveillance. It is best to confine them to an asylum for the insane where they will be comfortably cared for and often cured of this menstrual instability of mind.

DELUSIONS OF PERSECUTION.

Neisser⁸ reports the case of a man aged forty-three years who had delusions of persecution; he had been poisoned, attempts had been made to kill him, etc. He had been suffering from these delusions for many months, otherwise he was perfectly normal, conversed naturally and occupied his time with work. The case teaches that the claim of many authors that paranoia is characterized by fixed delusions of persecution is not broad enough to serve as a definition for the disease. Paranoia consists essentially in the tendency to evolve delusions of persecution. If a paranoiac could suddenly be robbed of all his delusions, he would still be insane, and in a short time he would have a new set of delusions. In the reported case this was entirely wanting. The existing delusions were probably the sequelæ of some acute disease with delirium, possibly some organic disease of the brain, the result of syphilis.

(To be continued.)

* Journal of Mental Sciences, January, 1894.

⁷ Jahrbuch. f. Psychiatrie, x, 2, 3.

⁸ Allgemein. Zeitsch. für Psych. vol. xciiv, No. 3.

Reports of Societies.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED Meeting, held at the New York Academy of Medicine, Tuesday evening, April 3, 1894, DR. M. ALLEN STARR, President, in the chair.

A CASE OF AMYOTROPHIC LATERAL SCLEROSIS,

presented by DR. CHARLES HENRY BROWN.

The patient was a boy aged fifteen who two and one-half years ago began to notice first a loss of proper speech, difficulty in whistling and in moving the tongue. These symptoms were rapidly followed by difficulty in deglutition, closing of the eyes, deafness and inability to move the facial muscles. After a few weeks he was unable to use the fingers freely in buttoning and unbuttoning his clothing. At present the patient is extremely emaciated. There is paralysis of the seventh nerve on both sides, and the "taper" mouth. There is trophic degeneration in the muscles of the face and neck. The tongue is very much atrophied. The larynx is distorted. He presents all the symptoms of nuclear implication of the bulb and there is glosso-labio-laryngeal paralysis. There is atrophy of numerous muscles in the upper extremity and of a few in the lower extremity. There are general fine and coarse fibrillary twitchings all over the body; exaggeration of superficial and deep reflexes and slight tonic and spastic action in the movement of many muscles.

A CASE OF PROGRESSIVE MUSCULAR DYSTROPHY,

presented by DR. ALFRED WIENER.

The patient was a male, aged twenty years. He was in good health up to May, 1893, when he began to suffer considerable pain in the region of the liver and spleen. This was most severe on walking. Soon afterwards he began to experience difficulty in going upstairs, and he noticed that he was growing very much thinner. His weakness was at first confined to the muscles around the thigh; from here it spread up along the back and involved the muscles of the neck and shoulders. There was no vesical or rectal trouble. There is no history of alcoholism or syphilis. Family history negative.

The patient's present condition is as follows. No mental symptoms. Voice and speech appear to be normal. He is very much emaciated, especially in the neighborhood of the shoulders, back and thighs. He assumes the position of one with a marked lordosis, and walks with a waddling gait. On lying down it is impossible for him to turn over or lift his head from the pillow. His muscles are soft and flabby to the touch. There are no contractures nor fibrillary twitchings; no vaso-motor or trophic disturbance. The thoracic and abdominal organs appear to be in perfect condition. There is present no pseudo-hypertrophy in any of the lower muscles, nor does the patient give a history of any having existed. The deep reflexes are all much diminished. The nerves are not painful to pressure and there is no special tenderness. The lordosis is due to the paresis of the muscles of the dorsal and lumbar portions of the back.

DR. JOSEPH COLLINS said that the case presented by Dr. Brown was very similar to one under his observation at the present time, excepting that his patient was a man thirty-four years old, in whom the symptoms came on rapidly about six months ago. It is

very uncommon to see the disease at such an early age as that of Dr. Brown's patient, but he thought that cases showing the occurrence of the disease at even a more tender age have been recorded. The involvement of the fifth nerve that Dr. Brown's patient seemed to present he had never before heard of. The patient presented by Dr. Wiener seemed to be a typical case of muscular dystrophy, and one whose pathognomonic symptoms were in marked contrast to the case of amyotrophic lateral sclerosis shown by Dr. Brown.

The PRESIDENT said that the contrast between the cases shown by Drs. Brown and Wiener was interesting; one presented the typical features of amyotrophic lateral sclerosis, namely, atrophy, fibrillary twitchings, increased reflexes and bulbar invasion; the other showed a pure dystrophy, without twitching and without marked change of reflexes.

DR. E. D. FISHER said the cases presented by Drs. Brown and Wiener represent two distinct classes of diseases. The first shows apparently a rare condition in which an inflammation has affected the bulbs and later the anterior horns in the cervical region, with involvement of the lateral columns. In other words, we have amyotrophic lateral sclerosis with bulbar symptoms. The usual and not uncommon order of sequence is that of involvement of the cord, with extension later to the medulla. Dr. Fisher said a patient recently under his observation, aged twenty, presented bulbar symptoms of rather acute onset; death resulted suddenly, probably from some involvement of the respiratory centre in the medulla. The autopsy revealed softening in the region of the glossopharyngeal and pneumogastric nuclei. That case would probably have presented a similar clinical history, if the patient had lived.

DR. B. SACHS said he agreed with the diagnosis of amyotrophic lateral sclerosis in Dr. Brown's case. Dr. Wiener's case was undoubtedly one of progressive muscular dystrophy.

DR. WILLIAM M. LESZYNSKY called attention to the fact that in Dr. Wiener's case the upper part of the trapezius muscle was atrophied, while the lower part escaped. This partial atrophy, he said, usually occurs in progressive muscular atrophy of spinal origin.

DR. SACHS said that the partial atrophy of muscles may also occur in spinal dystrophies.

The PRESIDENT said that in three cases of amyotrophic lateral sclerosis coming under his observation, the bulbar symptoms were very prominent.

DR. SACHS expressed the opinion that the bulbar symptoms in amyotrophic lateral sclerosis were due to a natural extension of the disease upwards. He inquired whether there was any involvement of the eye in these cases.

DR. BROWN said there might be ophthalmoplegia.

DR. L. C. GRAY said he had seen the eye involved in one case.

DR. BROWN, in closing the discussion, said he presented his case as a typical one of amyotrophic lateral sclerosis, but rare in the fact that it had commenced in the bulb and extended downwards. He thought this type of nuclear trophic and motor disorder was somewhat acute in its manifestations, and rapidly ran its course. He considered that his case was in *status quo*, and would progress no further so far as degeneration of muscles was concerned. The boy presented a

typical picture of a glosso-labio-laryngeal paralysis, which is an extremely rare condition in childhood. The fibrillary twitchings and slight spastic actions and increase of the reflexes undoubtedly contribute to the picture of a lateral sclerosis.

The PRESIDENT exhibited a diagram showing the areas of anesthesia in the arms as the result of lesions involving different segments of the cervical and dorsal portions of the cord. This diagram, he said, was the result of a careful study of a large number of cases—either coming under his own observation, or reported by others—in which the spinal cord was involved. The result seems to show that for each segment of the cord there is an area of the skin which becomes anæsthetic when that segment is involved.

A CRITICAL REVIEW OF THE VARIOUS THEORIES OF URÆMIA, BASED UPON ORIGINAL EXPERIMENTAL OBSERVATIONS.

DR. C. A. HERTER read a paper on this subject. He began by stating that few subjects of a medical nature have received more attention at the hand of clinicians and investigators than that of uræmia. Yet at the present time there is an uncertainty as to the nature of the uræmic state that is discouraging both to the student of pathology and the practitioner who seeks to understand the conditions, he is called upon to treat.

He first gave a brief historical sketch of the growth of opinion regarding the nature of uræmia, and then reviewed in detail the various theories that have been advanced. The first one taken up was that known as the mechanical theory of uræmia, which has its chief basis in the clinical and post-mortem studies of Traube, who was impressed with the facts that in many cases of Bright's the blood is impoverished in its corpuscular and proteid elements, the left ventricle is hypertrophied, and the arterial tension is greatly increased. The hydræmia combined with high arterial tension was supposed to account for the cerebral oedema found at autopsy. The uræmic symptoms, Traube referred not to cerebral oedema, but to the anæmia of the brain, resulting from the pressure exerted by this oedema. There are objections to this theory. In the first place, oedema of the brain is present in only a small proportion of cases where there have been unequivocal symptoms of uræmia during life. There have been many cases of kidney disease with no hydræmia, no cardiac hypertrophy and no increase of arterial tension; yet even when these latter conditions are present, there is usually no oedema of the brain. In the second place, oedema of the brain is found in conditions where Bright's is absent, and there are no symptoms of uræmia. Then again, drugs which produce convulsions may produce cerebral oedema, and it is likely that the oedema of the brain seen in uræmics is often the consequence rather than the cause of the convulsions. A further objection to the mechanical theory is that lowering of the arterial tension, where it is high, does not necessarily relieve the uræmic symptoms. The dyspnoea of Bright's is often thus relieved, but usually not the convulsions. Bleeding frequently stops the latter, but it checks them often also where there is no excess of tension. The effects of bleeding cannot be used as an argument in favor of Traube's theory, because it may be claimed that the bleeding relieves the circulation of poisonous substances.

The carbonate of ammonium theory. This was ad-

vanced by Frerichs, and is based upon the following propositions:

(1) It is a well-known property of urea to be readily transformed under favorable circumstances into ammonium carbonate.

(2) Carbonate of ammonium can always be detected by chemical means in the blood of uræmic patients.

(3) The injection of ammonium carbonate into the blood of animals gives rise to the symptomatic group of uræmia.

The fate of Frerich's theory hangs on his second proposition, namely, that the blood of uræmics always contains ammonium carbonate. From numerous experiments made by Gobeë, Oppler, Zalewsky and others, including the author, the following conclusions may be drawn: (1) That no ammonium carbonate or only a small amount is found in the blood of uræmic persons. (2) That amounts of ammonium carbonate far smaller than the quantity required to kill are readily detected. (3) That urea injected into the blood of dogs is not converted into ammonium carbonate. We may therefore state that Frerich's second proposition is without substantial foundation. It has been stated that the ammoniacal breath occasionally met with in uræmic patients is evidence of ammonia in the blood. It is more likely to be found in uræmics with gastro-intestinal symptoms, and the ammonia probably comes not from the blood, but from the gastro-intestinal tract.

The theory of Trietz differs from that of Frerich's mainly in that it supposes the conversion of urea into ammonium carbonate to take place in the intestine instead of the blood. He holds that it is by the entrance of the ammonium carbonate into the blood that the uræmic state arises, and the objections already made to the proposition of Frerichs, that uræmic blood contains ammonium carbonate, apply here with equal force.

The potassium theory of Felz and Ritter is based upon the idea that the potassium of the blood-serum, which is normally present in very small amount, might accumulate under pathological conditions and cause death, the potassium salt being rapidly fatal in animals when injected into the veins in even inconsiderable quantity. The experimental and chemical evidence of various observers is strongly opposed to this theory and it may be unhesitatingly abandoned.

The theory of Brown-Séquard. According to this writer, the kidney elaborates an internal secretion which is essential to health, and the suppression of which is responsible in a large degree for the phenomena of uræmia, while the accumulation of toxic substances in the blood is thought to have little or no influence in causing uræmic symptoms. The following are the chief facts upon which this hypothesis rests. (1) It is claimed that the injection of kidney extract into the circulation of a nephrectomized dog, causes the temporary disappearance of uræmic symptoms. (2) It is held that the well-authenticated cases of survival of patients with anuria for a week or more without any signs of uræmia, especially in cases of mechanical obstruction of the ureters, is evidence that it is owing to the internal secretion of the kidney that this inhibition of uræmic symptoms takes place. All the facts advanced in support of the first proposition, Dr. Herter said, are equivocal, and those advanced to support the internal secretion theory are equally weak.

The theory of extractives and toxines. The extractive theory of uræmia refers toxæmic symptoms to the accumulation in the blood of the extractives usually

found in urine; among these may be mentioned xanthine, uric acid, creatinine, etc. In order to show that a substance plays a part in the production of uræmic symptoms it is necessary to prove that this substance is present in the blood in uræmia, or is present in excessive amount, and that the substance is toxic in the higher mammals. The evidence is not fully satisfactory regarding either of these points. The observations that have been made hardly establish the fact that an accumulation of the extractives is a feature of all or many cases of uræmia. The evidence is even less strong in regard to particular members of the extractive group.

Regarding the view which attributes the uræmic phenomena to the action of toxins, the poisonous basic products of bacterial activity, there is little to be said, for the evidence on which it is built, is scanty and conflicting. None of the toxic ptomaines that have been suspected in this connection have been found in the blood of uræmics.

The urea theory of uræmia. The evidence relating to urea as a factor in uræmia may be grouped in answer to the following queries: (1) Does urea occur in excess in the blood of uræmic patients? (2) Is urea toxic, and if so, to what extent does it explain the symptoms of uræmia? As regards the first question, we have a sufficiently large accumulation of observations made by competent investigators to enable us to reach a definite decision. In the blood of Bright's disease, the quantity of urea is largely increased beyond that found in the normal blood, and its presence is readily detected even by imperfect chemical methods. When we come to the second question, we find that the facts which favor and those which oppose the idea that urea is toxic seem to be about evenly balanced. Dr. Herter then reviewed the observations that have been made bearing on this question, and detailed a number of experiments made by himself which go to prove that pure urea injected into the blood of the dog and monkey in large amount is in the highest degree toxic. The autopsies in these cases disclosed marked congestion of the gastro-intestinal tract. To what extent and under what conditions urea is a factor in uræmia, the author said it was not possible for him to state at the present time. Facts at our command strongly favor the view that the gastro-intestinal symptoms of uræmia are due to urea. There is no doubt that we at present group together under the term uræmia, conditions which are totally distinct as regards pathology. The evidence is very strong, though not quite conclusive, that one group of symptoms depends largely on the accumulation of urea, and perhaps extractives in the blood, while another set of symptoms bears the stamp of an infective process operating in the presence of renal insufficiency. Observations may show that even further subdivisions of cases are necessitated by pathological considerations.

It is upon the following facts that the author based the view that urea plays an important part in causing the gastro-intestinal symptoms of uræmia:

(1) The presence of urea in excess in the blood in such cases.

(2) The property which pure urea possesses of causing such symptoms when injected in the circulation.

(3) The occurrence in Bright's disease of congestion of the gastro-intestinal tract, and the occurrence of a similar congestion in animals which is positively due to the injection of urea into the blood.

(4) The fact that urea is found in the dejecta of patients with gastro-intestinal uræmia.

(5) The absence in many of these cases of any elevation in temperature, or other evidence of acute toxæmia.

(6) The fact that the urine in these cases, even at the time of the crisis, is no more toxic than normal urine, which is in sharp contrast to the very toxic urines found in acute febrile uræmias of cerebral type.

Dr. W. H. THOMSON said the subject of uræmia has always been and still remains a very mixed one in his mind. Dr. Herter's paper is certainly a very valuable contribution to the subject. The cases of uræmia to which Dr. Herter principally confined himself—those in which the characteristic symptoms are vomiting and purging—form comparatively a small minority of those that come under our observation. In many cases there are no gastro-intestinal symptoms whatever. Theoretically, Dr. Thomson said, he still felt strongly inclined to the view that toxins play a very important part in the production of the purely nervous symptoms of uræmia. Regarding the experiments performed by Dr. Herter in order to prove the toxic effects of urea, Dr. Thomson inquired whether the injection into the blood of sodium chloride or other similar substances might not give rise to derangements of the system to some degree resembling those produced by the repeated and rapid introduction of increasing quantities of pure urea.

Dr. SACHS expressed the hope that the critics of the future would deal more leniently with Dr. Herter's theory than he had dealt with the theories reviewed in his paper, and that they would expend the same amount of thought and labor to prove their assertions. He did not think that any one should attempt to establish a single theory to explain such a complex of symptoms as we have in uræmia. Very much the same symptoms occur under other conditions, and we are perfectly willing to recognize the different morbid processes giving rise to them.

Dr. HERTER then closed the discussion. He stated that in his paper he did not advocate any one theory to explain all the phenomena of uræmia. What he did advocate was that there is a certain class of symptoms, a limited class, namely, the gastro-intestinal symptoms, which are met with in certain cases of uræmia, and which are due, in all probability, to urea. The proof of this is not absolutely satisfactory, but he did not see how the proofs adduced by his experiments could be interpreted in any other light. In reply to Dr. Thomson's question, Dr. Herter said that large quantities of sodium chloride can be injected into the blood without producing symptoms comparable to those produced by the introduction of urea. As regards the cerebral symptoms of uræmia, he does not know what they are due to, and in his paper, he made no attempt to throw any light on those cases. The autopsies on the animals which were killed by the introduction of urea were performed immediately after death, and the intestinal congestion was very marked.

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year: President, Dr. E. D. Fisher; Vice-President, Dr. C. A. Berter; Second Vice-President, Dr. W. M. Leszynsky; Recording Secretary, Dr. Frederick Peterson; Corresponding Secretary, Dr. Mary Putnam Jacobi; Treasurer, Dr. G. M. Hammond.

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HEART-FAILURE.

It has again and again been pointed out that the term heart-failure, though unfortunately too often used by physicians in their death returns is vague and indefinite, conveying no information, though possibly convenient to cover ignorance—being applicable to every alteration of the cardiac mechanism, whereby death results. Thus, heart-failure may be due to influences of a nervous kind—shock, inhibition through the pneumogastric, paralysis by narcotics or sedatives. Bouillaud relates an instance of a previously healthy man who died of syncope in a fright. Lancereaux, in a recent treatise, reports several cases of sudden death in previously healthy persons from violent excitation of the pneumogastric. In two of these cases, attacks of indigestion paralyzed the vagus centre.¹ "In both these patients," he says, "death supervened after a hearty meal, from syncope, as was proved by the empty heart-cavities, and the absence of any material disorder or lesion capable of explaining the cause of the death; every thing, moreover, went to show that the syncope was due to an overloaded stomach." To this category he referred the sudden death which often follows a blow on the epigastrium, or even the excessive drinking of cold water (reflex paralysis of heart through vagus excitation). Moreover, the sudden death which sometimes takes place in the course of pleurisy or pulmonary tuberculosis may be due to irritation of the vagi, "especially in those cases where the almost complete emptiness of the heart's cavities indicated death by syncope."² This conclusion is in accordance with some decisive experiments of Brown-Séquard and Paul Bert. Much more frequent is heart-failure from toxic, inflammatory and degenerative changes in the myocardium, from acute dilatation due to nutritive disturbances or to exhaustion from overwork.

The toxic lesions of the myocardium have been arranged under the heads of: (1) toxic, (2) pyretic myo-

carditis.³ Myocarditis toxic is the effect of poisoning by alcohol, phosphorus, arsenic, mercury, lead, etc. This affection manifests itself by a diminution of the muscular power of the heart. The organ, without presenting changes appreciable to palpation and percussion, "gives a feeble impulse and muffled beats." In poisoning by mercury, the heart is "flabby, soft, and friable, of a dirty gray or yellowish color; in poisoning by phosphorus, it is tumefied, mottled with purpuric spots, and is pale yellow or orange yellow." "The muscular fibre in the one case is pigmented and granular; in the other, it is the seat of a transformation which, to the microscope, manifests itself by the presence of granules which are strongly refractive and soluble in ether." Many pathologists, denying the existence of parenchymatous myocarditis would regard these lesions as simple parenchymatous and fatty degeneration.

Pyretic or infectious myocarditis is sufficiently common as a complication of cholera, yellow fever, diphtheria, small-pox, malignant scarlet fever, typhoid fever, etc. The heart-muscle is poisoned by the pyretogenous agent, becomes fatty and flabby, its pulsations are feeble and obscure; the pulse is small, irregular and accelerated; syncopal states are frequent, and are the cause of the sudden death so common at the close of grave fevers. Bourges, who has studied the alterations of the heart-muscle in malignant diphtheria, remarks that it is generally augmented in volume, "dilated, but not hypertrophied," "of a dead-leaf color." "When you dissociate the muscular fibres, you note their great fragility; they are tumefied and granular; may in fact undergo two kinds of degeneration, the granulo-fatty and the vitreous. Bourges also points out the fact that there are also sclerotic changes, so that it may be said that the diphtheria-poison "determines at the same time parenchymatous and interstitial lesions."⁴

Suppurative myocarditis, from septic infarcts in the walls of the heart (a complication of pyæmia and septicæmia); and acute interstitial myocarditis existing independently or following rheumatic pericarditis and endocarditis (also sometimes of syphilitic origin) are potent causes of heart-failure.

G. C. Henderson, in the "Transactions of the Pathological Society," London, 1883, gives an interesting report of a case of gummatous myocarditis followed by death; the interventricular septum and anterior wall were the seat of syphilitic nodules surrounded by sclerous rings which had extensively invaded and destroyed the muscular tissue. Hilton Fagge publishes a series of cases of "fibroid disease of the heart," and Dr. A. L. Loomis⁵ would make of "cardiac fibrosis" ("arterio-sclerosis of the heart") one of the most common causes of heart-failure. He believes that obstructive changes in the aorta and at the origin of the coronary arteries are most usually associated with fatty degeneration, while fibroid changes are associated with

¹ *Leçons de Clinique Médicale*, 3d series, 1894, p. 225.

² *Loc. cit.*, p. 226.

³ Lancereaux, *loc. cit.*

⁴ Bourges: *La diphthérie*, Paris, 1892.

⁵ *Transact. Climatological Society*, 1892, p. 73.

obstruction in the coronary arteries. This distinction appears to us well made.

Fatty degeneration of the myocardium, besides being a sequel of toxic and pyretic myocarditis (*vide supra*) follows wasting diseases, chronic anæmia and especially pernicious anæmia, and, notably, stenosis of the coronary arteries by which the nutritive supplies of the heart-muscle are cut off. It is a final stage in compensatory hypertrophy from Bright's disease, and in chronic valvular disease, whether stenosis or insufficiency. The heart-muscle, though the most untiring of all muscles, is perhaps the most prone to fatty degeneration. Certainly, persons affected with chronic valvular disease, with hypertrophy, or with hypertrophy from renal sclerosis, can expect unbroken compensation for only a limited number of years, and sooner or later, from complex causes, the overworked heart-muscle fails and becomes granular and fatty.

Acute dilatation without hypertrophy and without visible degeneration of the myocardium in its connection with heart-failure has been studied by Dr. John Curnow in two recent lectures.⁶ Naturally, he says, the symptoms of cardiac failure due to a primitive dilatation of the heart-cavities from insufficient nutrition are precisely the same as those due to a failure in compensatory hypertrophy subsequent to any grave circulatory obstruction. In the early stage, they are pallor, palpitation, headache and dyspnoea on exertion, with often a distressing angina. As the disease advances, there is lividity and œdema, and the pulse is small, irregular and rapid. Dilatation occurs to a limited extent in anæmia and chlorosis, in fatal cases of leukæmia, pernicious anæmia and chronic malaria. A form of cardiac dilatation frequently follows typhus and typhoid fever; the weakened walls of the heart readily give way, and distention occurs under the influence of ordinary tranquil work. Curnow, in the lectures referred to, gives examples of acute dilatation accompanying chronic malaria, beri-beri and scurvy.

The influence of overwork or overstrain in producing acute dilatation and sometimes complete cardiac failure was alluded to in a former number of the JOURNAL.⁷

That sudden death may result by paralysis or rupture from excessive strain and overfilling of the heart-cavities is by no means a very rare experience. Nevertheless, as Dr. A. L. Loomis⁸ well remarks, "it is safe to assume that heart-failure is impossible so long as the heart-cavities are of normal size, the heart-muscle of normal integrity, and the cardiac innervation not seriously disturbed, the function of the trophic nerves being normal."

To sum up, when physicians report cases of death as due to "heart-failure," it may be assumed that the "heart-failure" was due either to some overpowering nervous influence or to toxic, inflammatory or degenerative changes in the myocardium; or to suppurative or interstitial myocarditis; or to arterio-sclerosis of the

heart; or to fatty degeneration following wasting disease, valvular disease, or stenosis of the coronary arteries; or to acute primitive dilatation from prostrating fevers, chlorosis, leukæmia, pernicious anæmia, chronic malaria, overwork and other depressing influences!

At the meeting of the Climatological Society held at Richfield Springs, N. Y., in 1892, Dr. F. I. Knights, in discussing Dr. Loomis's paper, made the remark that a certificate of death from heart-failure was little different from one of death from want of breath. Entering deaths as due to "heart-disease" is amenable to almost the same objection, but certificates are returned in this manner by reputable physicians every day.

THE RÔLE OF THE NOSE IN ZOLA.¹

FOR a long time the study of "artistic anatomy," so called, has been recognized as a necessary and proper training for an artist or sculptor. Latterly, there has arisen what may be styled a study of literary physiology. The analytical and realistic school of writers fill their books with outspread dissections of the human body no less than of its soul, and remove the covers from society as from a watch to "show how the wheels go round."

The latest aspect of this physiological-romance writing is the discovery by a Frenchman that great writers depend largely upon some special sense for remembrance and reproduction of emotions, sensations and experiences. "Zola," says M. L. Bernard in his essay upon "*Les odeurs dans les romans de Zola*," "has more than any other man lived, suffered and revelled in the sense of smell," and he offers us accordingly a study of the smells in Zola's stories. But first we must begin with the nose of the master.

"In all the portraits of Zola which I have seen it was the nose which struck me first. The forehead is broad and well uncovered, circled with short, trimmed locks; the beard is thick-set, with short, bristling hairs; the glance is cold and piercing, though a little softened by the lenses of his glasses; the lips and mouth are so hidden under the moustache as to lose half their expression; but there is the nose alone in the full light of the mid-face. It is large, fleshy, broad, pierced by two great nostrils, which seem to quiver and inhale the air. Only to see this mighty nose explains all the associating descriptions of odors so well known throughout his books." Being gifted with such an olfactory organ, it is not to be wondered at that "Zola is the creator of a new terminology, of a language of odors, and that he leads his readers to study to analyze and classify them, to seize upon their secret harmonies, their mysterious relations to sentiments and ideas, their silent but irresistible influence upon resolve and conduct." Every page, and often every line, is marked by this masterly peculiarity.

Open any of his books, and examples are at hand. In "*L'Assommoir*" we find "the soapy odor," "the heavy, stale odor of the wash-house of Rue Neve

⁶ Lancet, January 6, 13, 1894.

⁷ Boston Medical and Surgical Journal, April 26, 1894, p. 421.

⁸ Proceedings of the Climatological Association, 1892, p. 72.

¹ Gazette des Hôpitaux, No. 46, 1894.

made much of; the odor of old dust and sour filth in Lorilleux's room." Each character has a perfume *sui generis* belonging to his age, sex, state of health, godly or vicious habits. So in "Pot-Bouille," "Bachelor exhales an odor of vulgar debauchery," "Madame Campardon, a fair odor of fresh autumn fruit," and "Nana, an odor of life, of all-powerful woman, which intoxicates one."

In other books we find the abbé with his "odor of a priest, of a man made unlike others." "The ruins of a house have an odor of damnation." We must admit we have smelt this odor in houses which were not in ruins or uninhabited.

Finally, in "Ventre de Paris," the swarming population of the Halles carries in every fold of its garments "an odor of spawn, one of those heavy odors which rises from the rushes and shiny lilypads when the eggs burst from the belly of the fish fainting from love in the sun."

Such is the interlinear study of the smells and stinks in Zola's books. Surely the study of literary physiology of special senses is but just begun. We may yet find a cipher which will disclose a system of acoustics in Gibbon, of visual physiology in Cervantes, of tactile sensibility in Thackeray; and since Scott's stag drank itself full, there is every chance that we may find between the lines of Marmion and Ivanhoe a detailed study of the sense of taste.

MEDICAL NOTES.

AN HONOR TO PROFESSOR VIRCHOW. — The King of Italy has conferred on Professor Virchow the Grand Cross of the Order of SS. Maurice and Lazarus.

A STATUE OF DR. SIMS. — A bronze statue of Dr. J. Marion Sims, by Du Bois, of Paris, has been completed, and will be erected in Bryant Park as soon as the pedestal is ready.

SMALL-POX AT NEW YORK QUARANTINE. — Two cases of small-pox were detained at quarantine in New York Harbor on May 10th, from the steamer *Roland* from Bremen.

A PHYSICIAN'S GENEROUS BEQUEST TO NURSES. — The late Dr. S. J. Moore, of Glasgow, has bequeathed the residue of his estate, after the payment of other legacies, etc., to found a convalescent home for nurses, to be called by his name. The amount of the bequest is likely to be over \$200,000.

ONE HUNDRED AND FIVE YEARS OLD. — According to the *Journal of the American Medical Association*, Mrs. Hannah Chard, of Glassboro, N. J., was one hundred and five years old on April 20th, having been born at Brandywine in 1789. She is still able to go out, and has one hundred and eighty grandchildren and great-grandchildren.

THE AMERICAN ASSOCIATION OF RAILWAY SURGEONS, at its annual meeting in Galveston, Texas, seems to have had a very lively experience over the election of its officers. Pandemonium reigned; every-

body had the floor and spoke at once; the presiding officer was helpless, and epithets were freely exchanged. No blood was shed. The Texas air was not responsible, for the trouble really dated from the preceding meeting.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, May 16, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 51, scarlet fever 58, measles 16, typhoid fever 18, small-pox 1. There is one case of small-pox at the Canterbury Street Hospital, and three cases at Gallop's Island; no deaths. During the week the State Board of Health received reports of the following cases of small-pox: Holyoke 1, Worcester 1, Chicopee 1, Randolph 1, Chelsea 1.

SMALL-POX IN PROVIDENCE. — A fourth case of small-pox was discovered last week in Providence, which, like the three of a previous week, has not yet been traced to any origin of infection.

BOSTON CITY HOSPITAL. — Mr. A. Shuman has been re-elected President of the Board of Trustees of the Boston City Hospital, and Mr. H. H. Sprague has been re-appointed on the Board. The Board has requested of the City Government a special appropriation of \$330,000 for various much-needed purposes not provided for by present funds and contracts.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Censors' examination of the Suffolk District Medical Society will be held on June 7th, at 2 P. M., at 19 Boylston Place. The Censors of the Suffolk District officiate for the Society at large, and candidates are requested to make personal application to the Secretary three days before the meeting.

PROGRESS OF THE MEDICAL REGISTRATION BILL IN THE MASSACHUSETTS LEGISLATURE. — In the House last week the Senate Bill to regulate the practice of medicine was passed to a third reading, a substitute bill, offered by Mr. Hayes of Lowell, to punish persons illegally using the designation "M.D." being rejected.

A RESIDUARY LEGACY TO THE CAMBRIDGE HOSPITAL. — The will of Jacob B. Remick, of Cambridge, leaves his estate in trust during the life of certain persons named; but upon their death the entire estate is to be converted into cash, one-third of which is to be given to the Cambridge Hospital. The value of the bequest is about ten thousand dollars. The Avon Home and the Old Ladies' Home of Cambridge receive the other two-thirds.

NEW YORK.

OPENING OF THE NEW POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL. — On the afternoon of May 8th, a public reception was given at the new Post-Graduate Medical School and Hospital, and in the evening the formal opening exercises of the institution took place. The Secretary, Dr. Clarence C. Rice,

read a report giving the history of the school, and addresses were made by the President, Dr. D. B. St. John Roosa, the Rev. William R. Huntington, D.D., and St. Clair McKelway, Esq., of Brooklyn.

SEIZURE OF TUBERCULOUS BEEF.—On the 7th of May the meat inspectors of the Board of Health seized the carcass of a cow affected with tuberculosis, which had been cut into quarters, but not yet hung up for sale, at West Washington Market. It was found that the carcass had been shipped from Goshen, Orange County, by a milk-dealer and stock-raiser by the name of Smith, and Dr. Johnson, the veterinary surgeon to the Health Department, is making an investigation of the case. Pending his report, the Board has ordered that all meat and milk from Smith's farm shall be seized when it reaches the city. Several carcasses of tuberculous beef have lately been discovered in the markets, and it is feared that a whole herd of cattle, and possibly several herds, in Orange County may be infected with the disease.

A PENSION FUND FOR EMPLOYÉS OF THE HEALTH DEPARTMENT.—The Governor has signed the Lawson Bill, establishing a pension fund for the physicians, nurses, clerks and other employés of the Health Department who have served a term of twenty years, and also for the families of employés dying in the discharge of duty. The fund from which the pensions will be paid is to be made up of the fines and penalties collected for violations of the city health laws, and of the fees paid for searches of the records.

THE KILLING OF THE ELEPHANT.—The problem of how best to kill an elephant weighing over five tons has presented itself to the Park Commissioners during the past week. The animal known as "Tip," which was presented to the city some years ago by Forepaugh, the showman, has always been a vicious creature, and it was finally determined that for the safety of the keepers at the Central Park Menagerie and of the general public it would be advisable to destroy him. Poison was selected as the most satisfactory means of accomplishing this object; and Dr. George S. Huntington, of the College of Physicians and Surgeons, was asked to take charge of the killing. Cyanide of potassium was determined upon, and the attempt was first made to give it to the elephant concealed in carrots and apples. He quickly detected the bitter taste, however, and ejected the articles from his mouth. A half a loaf of rye bread with a cavity in it filled with the cyanide he also tossed from him. Finally, the expedient was tried of giving him the poison in capsules mixed with a bran mash, and this proved successful. Death occurred in a comparatively short time, and was evidently quite painless.

PHILADELPHIA.

THE UNIVERSITY OF PENNSYLVANIA will hold its commencements of all its departments during the first week in June.

JEFFERSON COLLEGE held its commencement exercises May 9th, and graduated a class of 163. The

trustees conferred the degree of LL.D. upon Prof. William Goodell, M.D.

THE MEDICO-CHIRURGICAL COLLEGE graduated the largest class in its history on the 11th inst., 44 students receiving their medical degrees.

THE WISTAR INSTITUTE OF ANATOMY AND BIOLOGY will be opened May 21st with addresses by Professors Pepper, William Osler and Harrison Allen.

NEW WOMEN PHYSICIANS.—Fifty women received the degree of Doctor of Medicine at the commencement of the Women's Medical College of Pennsylvania last week.

Miscellany.

OUT-PATIENT HOSPITAL ABUSE.

A PHYSICIAN sends to the *British Medical Journal* the following note from a patient, a tradesman with a good income, describing a bit of out-patient experience in Liverpool.

I called at the doctor's residence, and was told that he was at the Eye Infirmary, and would not be home for some hours. As I had not made arrangements to stay overnight, I said I could not wait so long, and was recommended to go and see him at the infirmary. I did so, and found myself in a room with about 150 or 160 other persons, mostly, so far as I could judge, working-class people like myself and in easy circumstances. Looking around I recognized an old friend of mine from Blackburn, and asked him what on earth he was doing there. He said he came up regularly to have his eyes looked after. "Why," I said, "you could afford to pay this man a guinea every time, couldn't you?" "Yes," said he; "but what is the use of being such a fool as to throw away your guineas when this chap will see you for nothing?"

It might not be impossible to repeat the same experience at many hospitals in this country, and as the number increases so will the abuse.

PERMANGANATE OF POTASH IN OPIUM POISONING.

DR. WALTER L. PYLE¹ reports from the Emergency Hospital of Washington, D. C., four cases of opium poisoning in which permanganate of potash was administered. Although the conditions under which the cases were treated and the considerable use of other restoratives make the results of no conclusive value, the report of all such cases is much to be desired.

There was one fatal case, a man fifty-seven years old, who had taken an unknown number of morphine pills, each containing one-eighth of a grain. He was brought to the hospital about five hours after the supposed time of taking the poison. Permanganate of potash was given by mouth and hypodermatically. Two hours later the conjunctival and plantar reflexes returned for a while, but the man died seven hours after entrance.

A man twenty-two years old took three teaspoonfuls of sulphate of morphia; treatment was begun thirty minutes later. He was given strychnine, atro-

¹ Medical News, May 12, 1894.

pine, caffeine and coffee, and the permanganate of potash, six grains to a pint of water, was given by stomach and subcutaneously. In eight hours he was considered out of danger, and the next day was discharged well.

The other two patients were women, aged twenty-five and twenty-one years, who took respectively half an ounce and two drachms of laudanum. In each case atropine was used, and the permanganate was given by mouth within a very short time, and a little later subcutaneously. A few hours sufficed to put both women out of danger.

OBITUARY.

ALBERT CUSHMAN STANARD, M.D.

THE following resolutions were passed at the last regular meeting of the Harvard Medical Society of New York:

Whereas, Dr. Albert Cushman Stanard, an esteemed member of the Harvard Medical Society of New York, has in the infinite wisdom of God been called thus early to lay aside the duties of life, cut down in the vigor of early manhood, as the paths of usefulness and promises of prosperity were opening wide to him. Therefore, be it

Resolved, That in his untimely death we recognize the loss to the Society of one of its most promising and worthy members, and desire to pay to his memory a tribute of sincere respect;

Resolved, That we extend to his stricken sisters our heartfelt sympathy at the grief which has come upon them;

Resolved, That these resolutions be published in the *Boston Medical and Surgical Journal*.

[Signed.] JOHN B. WALKER, M.D.
JOHN H. HUDDLESTON, M.D.
WILLIAM B. COLEY, M.D.

Correspondence.

THE AMERICAN MEDICAL ASSOCIATION.

The following letter has been received through Dr. H. O. Marcy:

BOSTON, May 2, 1894.

DEAR SIR:—I take pleasure in advising you that the Chicago and North-Western Railway Co. have made arrangements for an excursion rate for physicians attending the San Francisco meeting of the American Medical Association. The fare from Boston to San Francisco and return will be \$125.

A palace-car will leave Boston at 2 P. M., Monday, May 28th, via Boston & Albany, New York Central & Hudson River, and Lake Shore & Michigan Southern Railroads, connecting at Chicago, where a through palace-car will be provided, leaving Chicago at 10.30 P. M., Tuesday, May 29th, via Chicago & North-Western, Union Pacific and Southern Pacific Railroads.

Diagrams of sleeping-cars will be in this office, No. 5 State Street, Boston, and berths reserved from Boston to Chicago, and similar accommodations assigned, from Chicago to San Francisco. The price of berths, Boston to San Francisco will be \$21.

Holders of these excursion tickets, will, on payment of \$15 extra, previous to departure from Missouri River (on going trip) be permitted to return via Portland and Union Pacific Railway, or any of the direct Northern routes.

Tickets are valid for return until July 15, 1894. If any extension of time or reduction of rates are made, I will, with pleasure, promptly advise of same.

Remittance may be made to this office to cover cost of tickets and sleeping-car berths.

Yours very truly,
J. E. BRITAIN, N. E. P. Agent.

METEOROLOGICAL RECORD.

For the week ending May 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. e		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S..29	30.28	46	48	43	44	75	60	N.	S.	20	10	C.	C.	.02
M..30	30.34	56	72	40	40	46	43	N.W.	S.W.	6	15	C.	C.	
T..1	30.04	68	80	55	58	46	52	N.E.	S.W.	3	7	C.	C.	
W..2	29.84	78	88	64	47	52	50	W.	W.	11	12	F.	F.	
T..3	30.18	56	69	32	64	81	72	N.E.	S.E.	13	5	O.	C.	
F..4	30.20	46	49	42	88	98	93	E.	E.	8	7	O.	O.	
S..5	30.06	56	67	46	82	68	75	S.W.	S.	2	8	C.	C.	.06
Mean	30.13	66	49				64							.29

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 5, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Measles.	
New York	1,891,306	851	362	18.00	18.12	1.80	7.80	1.92	
Chicago	1,438,000								
Philadelphia	1,115,562	385		11.70		1.30	4.94	1.68	
Brooklyn	978,394	891	144	15.00	20.00	.75	7.50	2.25	
St. Louis	560,000								
Boston	487,897	191	63	13.25	9.54	1.06	5.83	1.06	
Baltimore	500,000								
Washington	308,131	99	26	12.12	15.16	2.02	2.02		
Cincinnati	305,000	124	40	11.34	14.58	2.43	4.05		
Cleveland	280,000	119	53	12.04	19.78	1.72	1.72	2.58	
Pittsburg	263,769								
Milwaukee	250,000								
Nashville	87,754	32	9	6.26	9.39		3.13		
Charleston	65,165	39	19	20.48	2.56	15.36			
Portland	40,000								
Worcester	96,217	29	13	17.25	24.15	3.45	10.38		
Fall River	87,411	31	16	9.69	35.47	3.23			
Lowell	87,181	42	11	7.14	20.66	2.38	2.38		
Cambridge	77,100	16	3	18.75	6.25	6.25			
Lynn	62,656	21							
Springfield	48,064	18	5	11.11	27.77		5.55		
Lawrence	48,365								
New Bedford	45,866	19	6	21.04					
Holyoke	41,278	21	16	33.33	14.28			4.76	
Salem	32,253	9	3	11.11			11.11		
Brookton	32,140								
Haverhill	31,886	4	2						
Chelsea	30,264	18	5	16.66	11.11		11.11		
Malden	29,394	7	1	14.28	28.56		14.28		
Newton	27,556	9	7	11.11	11.11		11.11		
Fitchburg	27,146	5	3		20.00				
Taunton	26,972	16	5	12.50	12.50				
Gloucester	26,688								
Waltham	23,068	6	1		33.33				
Quincy	19,642								
Pittsfield	18,802	6	4						
Everett	16,585	5	5	40.00			20.00		
Northampton	16,331	7	1		14.28				
Newburyport	14,073	4	0						
Amesbury	10,920	3	0	33.33					

Deaths reported 2,551: under five years of age 836; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 373, acute lung diseases 363, consumption 302, diphtheria and croup 148, diarrhoeal diseases 42, measles 37, whooping-cough 35, scarlet fever 33, cerebro-spinal meningitis 29, typhoid fever 25, small-pox, erysipelas and malarial fever 8 each.

From whooping-cough New York 11, Philadelphia and Brooklyn 4 each, Boston, Washington and Cincinnati 3 each, Cleveland and Taunton 2 each, Nashville, Fall River and Cambridge 1 each. From scarlet fever New York 19, Boston 5, Brooklyn 3, Philadelphia and New Bedford 2 each, Cleveland and Holyoke 1 each. From cerebro-spinal meningitis New York 12, Washington, Cleveland and Holyoke 4 each, Brooklyn, Somerville, New Bedford, Chelsea and Pittsfield 1 each. From typhoid fever Philadelphia 6, Brooklyn 5, Cincinnati and Somerville 3 each,

New York, Boston, Charleston, Worcester, Lowell, Cambridge, Springfield and New Bedford 1 each. From small-pox New York 4, Brooklyn 3, Holyoke 1. From erysipelas New York 4, Philadelphia 2, Washington and Amesbury 1 each. From malarial fever New York 3, Brooklyn 2, Philadelphia and Charleston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending April 21st, the death-rate was 18.2. Deaths reported 3,054: acute diseases of the respiratory organs (London) 304, measles 192, whooping-cough 117, diphtheria 79, scarlet fever 60, diarrhoea 31, fever 29, small-pox (London 4, Birmingham 3, West Ham 2, Manchester 1) 10.

The death-rates ranged from 11.9 in Portsmouth to 26.4 in —; Birmingham 20.2, Bradford 17.9, Croydon 13.0 Derby 15.8, Huddersfield 16.4, Leeds 16.6, Liverpool 14.7, London 18.1, Manchester 19.2, Newcastle-on-Tyne 16.5, Nottingham 16.3, Sheffield 15.3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442 for the week ending April 28th, the death-rate was 18.3. Deaths reported 3,665: acute diseases of the respiratory organs (London) 255, measles 203, whooping-cough 148, diphtheria 77, scarlet fever 58, diarrhoea 28, fever 26, small-pox (Birmingham 9, London 6, Portsmouth 3) 18.

The death-rates ranged from 11.0 in Portsmouth to 25.9 in Oldham; Birmingham 22.5, Bradford 17.5, Derby 12.7, Leeds 16.2, Liverpool 25.6, London 18.5, Manchester 20.9, Nottingham 18.2, Sheffield 16.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 5, 1894, TO MAY 11, 1894.

CAPTAIN WILLIAM G. SPENCER, assistant surgeon, will report in person to the president of the Army retiring board at Omaha, Nebraska, at such time as he may designate, for examination by the board.

Leave of absence for two months to take effect on or about July 1, 1894, is granted MAJOR WILLIAM E. WATERS, surgeon, U. S. A.

A board of medical officers to consist of MAJOR JOSEPH K. CORSON, MAJOR VALERY HAVARD and MAJOR EDWARD B. MOSELEY, surgeons, is appointed to meet at West Point, New York, June 1, 1894, or as soon thereafter as practicable, for the physical examination of the cadets of the graduating class at the U. S. Military Academy and such other cadets of the Academy and candidates for admission thereto, as may be ordered before it.

CAPTAINS GEORGE H. TORNEY and LOUIS W. CREAMPTON, assistant surgeons, will report in person to COLONEL CHAS. H. ALDEN, assistant surgeon-general, president of the examining board appointed to meet at the office of the surgeon-general, U. S. A., on Tuesday, May 8, 1894, at such time as they may be required by the board for examination as to their fitness for promotion.

Leave of absence for twenty days to take effect on being relieved from duty at David's Island, N. Y., is granted MAJOR JOS. R. GIBSON, surgeon.

FIRST-LIEUT. BENJAMIN L. TEN EYCK, assistant surgeon, now on temporary duty at Fort Clark, Texas, is assigned to duty at that post.

FIRST-LIEUT. WILLIAM F. LIPPITT, JR., assistant surgeon, is relieved from duty at Camp Eagle Pass, Texas, and ordered to Fort Leavenworth, Kansas, for duty.

Paragraph 2, S. O. No. 86, April 12, 1894, A. G. O., assigning FIRST-LIEUT. HARLAN E. MCVAY, assistant surgeon, to station at Angel Island, Cal., is revoked. He will be relieved from duty at Fort Huachuca, Arizona, and will report for duty at the Presidio of San Francisco, Cal., relieving FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, who, after being thus relieved, will report for duty at Angel Island, Cal.

FIRST-LIEUT. JOHN S. KULP, assistant surgeon, is relieved from duty at Fort Sheridan, Illinois, and ordered to Fort Spokane, Washington, for duty.

FIRST-LIEUT. GEORGE M. WELLS, assistant surgeon, will proceed to Fort Bowie, Arizona Territory, and report for temporary duty not later than the 15th inst., during the absence on leave of CAPTAIN JEFFERSON D. POINDEXTER, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 12, 1894.

R. A. MAHMION, surgeon, will hold himself to relieve Medical Inspector G. A. BRIGHT, on the U. S. S. "Newark."

G. E. H. HARMON, surgeon, to the U. S. S. "Monongahela," June 15, 1894.

W. M. BARNUM, assistant surgeon, to the U. S. S. "Monongahela," June 1, 1894.

J. M. STEELE, surgeon, from the U. S. S. "St. Louis" and to League Island Yard.

H. G. BEYER, surgeon, from Naval Academy and to the "Bancroft."

CLEMENT BIDDLE, passed assistant surgeon, from League Island Yard and to Marine Rendezvous, Philadelphia, Pa.

J. F. LEYS, assistant surgeon, with one month's leave with permission to go abroad.

SOCIETY NOTICES.

BOSTON MEDICAL ASSOCIATION.—The annual meeting of the Boston Medical Association will be held Monday afternoon, at 4 o'clock, May 21st, at the Boylston Medical Library, 19 Boylston Place.

This Association, founded in 1806 for the maintenance of a proper fee table, should be known and joined by every member of the Massachusetts Medical Society residing in Boston.

CHARLES L. SCUDDER, M.D., Secretary.

AMERICAN ORTHOPÆDIC ASSOCIATION.—The eighth annual meeting will be held in Washington, D. C., Tuesday, Wednesday, Thursday and Friday, May 29th, 30th, 31st and June 1st, inclusive.

The Sessions will be held in the Preparatory Department, Columbian University, H near 14th Street.

The Annual Dinner will be omitted and instead a Breakfast will be given by the outgoing President at 2 P. M., on Wednesday at the Shorham, to members of the Association. This will give the members an opportunity to attend the dinner of the General Congress on Wednesday evening, to which they are all invited.

The President's Address will be delivered on Wednesday after the Executive Session, on: "Orthopedic Surgery, of the Past and Future, and the Influence of Surgical Bacteriology and Modern Pathology upon the Subject."

There are forty-five papers already announced and the following discussions have been arranged:

First Day.—"Flat-Foot." (a) "Its Etiology and Mechanism of its Production." Newton M. Schaffer, M.D., New York. (b) "Pathology, Prognosis and Mechanical and Surgical Treatment." T. C. Morton, M.D., Philadelphia. (c) "Gymnastic Treatment." H. Augustus Wilson, M.D. Royal Whitman, M.D., New York; Sidney Roberts, M.D., Philadelphia; J. D. Griffith, M.D., Kansas City; Roswell Park, M.D., and others will take part in the discussion.

Second Day.—"Rachitic Deformities." (a) "Etiology, Clinical History and Lesions." A. Jacobi, M.D., New York. (b) "Its Various Manifestations, Diagnosis, Differential Diagnosis and Prognosis." Benj. Lee, M.D., Philadelphia. (c) "Mechanical and Constitutional Treatment." Samuel Ketch, M.D., New York. (d) "Operative Treatment." DeForest Willard, M.D., Philadelphia.

Third Day.—"Paralytic Deformities." (a) "Etiology, Clinical History and Pathological Conditions Producing Them." E. H. Bradford, M.D., Boston. (b) "Varieties, Diagnosis, Differential Diagnosis and Prognosis." E. G. Brackett, M.D., Boston. (c) "Mechanical Treatment." John Ridlon, M.D., Chicago; Joel Goldthwait, M.D., Boston. (d) "Operative Treatment, Paralytic and Rachitic Deformities." DeForest Willard, M.D., Philadelphia.

JOHN RIDLON, M.D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, Marine-Hospital Service. Vol. viii. Washington. 1894.

De la Maladie de Basedow et en particulier de sa Pathogénie. Par Frederick Chamberlain, Docteur en Médecine du Yale Medical School, U. S. A.: Docteur en Médecine de la Faculté de Paris. Paris: Henri Jouve. 1894.

The Etiology of Osseous Deformities of the Head, Face, Jaws and Teeth. By Eugene S. Talbot, M.D., D.D.S. Third edition, revised and enlarged, with 461 illustrations, 422 of which are original. Chicago: The W. T. Keener Co. 1894.

Primer Congreso Médico-Farmacéutico Regional, Celebrado en Valencia del 26 al 31 de Julio de 1891. Para Conmemorar el Año 50 de la fundación del Instituto Médico. Actas Y Der talles, publicados bajo la dirección del Dr. Faustino Barberá, Secretario general de dicho Congreso, Valencia. 1894.

Essentials of Anatomy, Including the Anatomy of the Viscera, arranged in the form of Questions and Answers, Prepared especially for Students of Medicine. By Charles E. Nancrede, M.D. Fifth edition, with an appendix on the Osteology of the Human Body, the whole based on the last edition of Gray's Anatomy. One hundred and eighty fine illustrations. Philadelphia: W. B. Saunders. 1894.

Lecture.

URINARY DIAGNOSIS.¹

LECTURE II.

BY EDWARD S. WOOD, M.D.,
Professor of Chemistry, Harvard Medical School.

Albuminuria.—This term simply means the presence of albumin in the urine. It is not synonymous with Bright's disease, by which we mean one of the forms of organic disease of the kidneys; but, on the contrary, in the vast majority of the cases in which this symptom is present, it is due to some other pathological condition. The causes of albuminuria are very numerous and may be arranged in three principal classes, as follows:

- (1) Organic diseases of the kidneys.
- (2) Renal disturbances not due to organic disease.
- (3) Diseases of the urinary or genito-urinary passages attended with suppuration or hæmorrhage.

There is another class of cases in which the albuminuria is due to an altered composition of the blood in some diseases of the blood, but we need not consider such cases here since no examination of the urine is necessary in order to make a diagnosis of them.

We will first take up a study of the changes of the urine in the first, and by far the most important of the above classes of cases, namely, the organic diseases of the kidneys, which are sometimes grouped together under the general name Bright's disease. Of these organic diseases there are four which are quite distinct clinically, and the urinary secretion in these different affections has decidedly different characteristics, with the possible exception of the two most chronic forms, the interstitial and the amyloid degeneration of the kidneys, between which the differential diagnosis can generally be easily made by the clinical history and the physical examination of the patient.

In studying these diseases of the kidneys, I shall confine myself almost exclusively to the changes which are found in the urine, particularly those that are of diagnostic importance, and in referring to the different diseases, I shall use chiefly the terms of the English classification with which you are most familiar.

Acute Nephritis.—In this disease, also called acute Bright's disease, and acute parenchymatous nephritis, which consists chiefly of an acute inflammation of the membrane lining the renal tubules, the attack is usually sudden like that of other acute diseases, and is liable to follow exposure to cold, or to result from some infectious disease, such as diphtheria or scarlet fever. The urine suddenly falls in quantity to 400 or 500 c. c. in twenty-four hours, and often much less than this is passed. In the last case of severe acute nephritis, which I saw, the quantity was only 120 c. c. (4 fluid ounces) in forty-eight hours. The color changes to a smoky or deep black, and after settling we can see an abundant dark-brown sediment. The reaction is usually faintly acid. The specific gravity may be either higher or lower than normal. The absolute quantity of normal solids in twenty-four hours is much diminished, and the chlorine is generally totally absent or diminished to an exceedingly slight trace, during the early stage of the disease, while the dropsy is increasing. During this stage, which in cases that are to terminate favorably generally lasts

but a few days, the percentage of albumin is large, one-half per cent. or more. The maximum proportion of albumin reported in this disease is one and a half per cent.

The sediment in this early stage is seen upon microscopic examination to contain very numerous abnormal blood globules, by which I mean red corpuscles which have lost their contents by osmosis, and consequently their density, so that they have but little refrangibility, and have become swollen to a spherical form, their diameter being very much less than that of a normal corpuscle. In renal hæmorrhage, when the hæmorrhage is in the cortical portion of the kidneys, the blood corpuscles have almost universally this abnormal appearance. The sediment also contains numerous renal cells which are colored brown with decomposed blood pigment and are more or less granular, and the following variety of renal casts; epithelial, blood, brown-granular, fibrinous, simple granular and a few hyaline casts. By a fibrinous cast I mean the transparent, dense, highly refracting cast, which is colored brown or yellow; it is not composed of fibrin.

This is the condition of the urine during the early stage of acute nephritis while the inflammation is increasing or at its height, and the dropsy is increasing or at a standstill. If death occurs at this time, the kidney is what is called the large red kidney. As soon as the inflammation begins to subside, the character of the urine begins to change. The first change noticeable is the beginning increase in the daily quantity, and with this increase in quantity of urine, we see a corresponding diminution in the percentage of albumin. In acute nephritis, we may consider it the rule that, in the earlier stages of the disease, until the recovery of the kidney is nearly complete, the smaller the quantity of urine the larger the amount of albumin and *vice versa*. Also, with the beginning increase in quantity of urine, we find that the chlorine reappears or increases in amount, and the dropsy begins to diminish. As the quantity of urine increases, the color becomes less and less brown until, when the urine has reached about the normal, the color becomes slightly smoky.

From the beginning increase in the quantity of urine until it has reached about the normal amount, we find also a change in the character of the sediment. The blood globules, brown-granular and fibrinous casts gradually diminish in number; the proportion of hyaline and simple granular casts increases; and the number of brown-granular renal cells diminishes, most of them being free from color. At this time, which may be considered as the very beginning of convalescence, fatty renal cells appear; fatty elements (cells and oil globules) are seen on the casts; and fatty casts begin to be found. These fatty elements in the sediment increase gradually, until, in some cases, they may, for a day or two, form the predominating constituent of the sediment. They then gradually diminish and are found only in small proportion in the sediment of the urine in advanced convalescence.

If the case progresses favorably, without relapse or exacerbation, which is by no means the rule, the urine continues to increase, often very rapidly and with a correspondingly rapid diminution of the dropsy, from about the normal to two or three times the normal quantity, so that it may reach from two and a half to five litres (or quarts) in twenty-four hours. With the increase in the quantity of urine the color becomes pale, the smoky tint gradually disappearing; the

¹ Evening Lecture delivered at the Harvard Medical School, February 29, 1894.

specific gravity falls and the quantity of sediment becomes slight. The quantity of normal solids in the twenty-four hours may exceed the normal, since the urine contains not only the urea and other solids which are being formed in the economy at the time, but, in addition, those which were in the dropsical fluid. The albumin diminishes steadily with the increase of urine until it is present only in exceedingly slight traces. With the increase in the quantity of urine above the normal, the brown-granular, fibrinous, blood, fatty and epithelial casts gradually diminish and finally disappear; and we have in the sediment during the last few weeks of convalescence, only a very few blood globules and renal cells and a few hyaline and finely-granular casts, some of which have an occasional blood globule and renal cell attached. When the convalescence is nearly complete, the quantity of urine falls from the high point which it has reached, but without a corresponding increase in the amount of albumin, until it finally, with the complete restoration of the kidneys, reaches the normal, when the albumin and all of the abnormal constituents of the sediment disappear.

If an exacerbation occurs, and this is the rule rather than the exception, the quantity of urine suddenly falls to the normal or below, if the exacerbation be a severe one, and the color generally becomes more or less blood-red, the albumin increases again, and in the sediment we see an increase or a reappearance of the blood and epithelial casts. The blood globules, however, are almost invariably more nearly normal in character than in the first stage of the disease, and the blood pigment is not so much decomposed. This accounts for the blood-red color of the urine instead of the brown which we saw in the early stage. In some cases, during the progress of acute nephritis, several exacerbations may occur owing to some exposure to cold, errors in diet, or other causes, and in some cases the convalescence may be prolonged from one and one-half to two years before the kidneys become completely restored to a healthy condition, and the albumin and casts entirely disappear.

Subacute Nephritis, commonly called chronic parenchymatous nephritis, and also chronic tubular nephritis, may result from the acute disease, but it is more often chronic from the beginning, and frequently accompanies chronic wasting diseases, such as phthisis, syphilis, etc. In this disease, we find the so-called large white kidney after death. In this form of Bright's disease, the character of the urine varies according to the activity of the process going on in the kidneys. If the parenchymatous inflammation is active, the general dropy increases and, on simple inspection, the urine looks like that of a fever urine. The quantity passed in twenty-four hours is much diminished, generally from 400 to 600 c. c., but it may be much less than this. It is very high in color, not brown or bloody, of very high specific gravity, generally 1,026 to 1,030, very acid in reaction, and generally contains an abundant sediment, which is seen to consist chiefly of amorphous urates, as in many fever urines. The normal solids are relatively increased, with the exception of the chlorine, which is much diminished and may be nearly absent, if the dropy is increasing; but the daily quantity of solids is found upon quantitative estimation to be decidedly less than the normal. In the active stage of this disease the urine contains a larger proportion of albumin than in

any other kidney affection; generally the proportion is about one per cent., but it may reach as high as two or even five per cent. The sediment during this stage usually consists chiefly of amorphous urates, which should be removed before examining for the other constituents. This is done by allowing the urate sediment to settle, decanting the supernatant urine and adding to the sediment a considerable volume of lukewarm water, which will dissolve the urates and hold them in solution. The organized constituents will then settle, and may be seen as a rather heavy white deposit, which consists of numerous hyaline, granular and fatty casts, granular and fatty renal cells, and compound granule cells. It is rare to find any blood; and when blood occurs it is due, in my opinion, to a complication with acute nephritis.

Almost invariably, in this affection, owing to care or to appropriate treatment, an amelioration in the severity of the symptoms takes place, dropy diminishes and the other severer symptoms subside, and it is evident that the process going on in the kidneys is more or less inactive. When this occurs, the urine has an entirely different character. It is passed in larger quantity, but is still less than normal, generally from 1,100 to 1,300 c. c.: it is pale in color, of low specific gravity (1,010 to 1,015) slightly acid in reaction, and contains a considerable quantity of white sediment. The normal solids are diminished both relatively and absolutely. The albumin is less than in the active stage, but is still present in considerable quantity, from one-quarter to one-half per cent. The sediment is found to contain the same constituents as in the active stage, with the exception of the amorphous urates, but in smaller proportion, namely, hyaline, granular and fatty casts, granular and fatty renal cells, and compound granule cells.

In the latter stages of this disease, whether the process be active or not, we find for some months before death, in addition to these constituents, the so-called waxy cast, which is a transparent, dense, highly refracting, colorless cast. The waxy cast resembles the fibrinous cast seen in acute nephritis in every way, except that it is absolutely free from color. During the progress of a case of subacute nephritis we often see these two conditions of the urine alternating with each other a considerable number of times.

Chronic Nephritis (Interstitial).—This is the most insidious of all of the forms of Bright's disease. It has generally existed a long time before the physician is consulted and the urine examined. Some cases have, apparently, been traced to chronic lead-poisoning and malaria as a cause; but in most cases no definite cause can be assigned. After death from this form of kidney disease, we find the red, granular, contracted kidney; and in almost all cases there is also found hypertrophy of the left ventricle of the heart.

The urine is increased in quantity more or less, according to the advancement of the disease until the very latest stage, and is always more or less dilute unless complicated with some acute disease. From the beginning the urine gradually increases until it may reach four or even six litres (quarts) in twenty-four hours. But this increase is very gradual since the duration of the affection may be ten or even twenty years. The reaction is normal, the color at first normal, gradually becomes pale; the specific gravity gradually diminishes until it reaches 1,005 or 1,006; and the amount of sediment is slight, nor-

mal or less than normal. The normal solids are diminished relatively and absolutely according to the extent of the disease, except the indoxyl, which may be increased. The albumin varies from the slightest trace up to about one-quarter per cent. The sediment, up to the latest stage, consists only of hyaline, finely-granular, and granular casts. Towards the close of life the urine begins to fall until it is secreted in less than the normal quantity, but the specific gravity and the relative quantity of solids remains the same as when the amount of urine was large, so that the twenty-four hour quantity of solids is very much diminished. We may have only 400 or 500 c. c. of urine with a specific gravity of only 1,004 or 1,005, and in this final stage we may find only a very slight trace of albumin. The sediment at this time generally contains waxy casts in addition to the hyaline and granular casts. In this form of Bright's disease, the quantity of urine secreted at night is apt to far exceed that secreted during the day-time. The quantitative estimation of the urea is of very great value in this disease, since after the very earliest stage the twenty-four hour amount of the urea is diminished below the normal, and continues to diminish with the progress of the disease.

Amyloid Degeneration of the Kidneys.—This condition of the kidneys accompanies many wasting diseases such as suppurative diseases of the bones, phthisis, syphilis, etc., and when it exists in the kidneys, other organs, especially the liver and spleen, are usually found to be affected by it. It is very apt to be complicated with subacute nephritis, since both of these affections may be caused by similar conditions. The urine in amyloid degeneration resembles that of chronic interstitial nephritis, and from the urine alone it is impossible to make a differential diagnosis between these two forms of kidney disease. In amyloid degeneration, however, since the disease is primarily one of the blood-vessels and the secreting structure is only affected later, although the quantity of urine is increased to the same extent as in interstitial, the solids are not diminished in the same proportion, and hence the specific gravity is not as low, as a rule. In this disease, the urine steadily increases until it may reach three or four litres (or quarts), and the specific gravity correspondingly diminishes. The solids are also diminished relatively, but a quantitative estimation of the amount of normal solids in twenty-four hours, shows that they are more nearly normal in quantity than in interstitial nephritis. The albumin is only present in the urine in the very slightest trace at the beginning of the disease, but it gradually and steadily increases as the disease advances, and may reach one-half per cent. or more, especially if, as is usually the case, it be complicated with parenchymatous inflammation. The sediment is composed of hyaline and finely-granular casts, and in some instances of waxy casts also. If there is any parenchymatous inflammation we will find, in addition, fatty cells and casts.

Complications.—All of the above forms of disease of the kidneys are liable to be complicated, either with each other or with one of the hyperæmias, active or passive. Acute nephritis is especially apt to occur during the progress of any of the chronic forms, in which case, the quantity of urine will fall to an extent corresponding to the severity of the acute attack, and we will find the blood elements, globules and casts, in the sediment. Of the other forms of kidney disease,

the most important complication, and one of the most common, is the combination of the subacute (or chronic parenchymatous) with the chronic interstitial disease, which complication is called chronic diffuse nephritis. In this disease the interstitial element tends to increase the quantity of urine and the parenchymatous inflammation to diminish it, so that the daily amount of urine will be found to be largely increased if the interstitial disease predominates, and only slightly increased if the parenchymatous disease predominates. In the former case there will be but little albumin, and in the latter a comparatively large quantity. The sediment will naturally contain the hyaline and granular casts of both diseases, and the fatty elements, fatty casts, renal cells and compound granule cells of the subacute disease. The extent to which the kidneys are affected, or the amount of destruction of the kidney tissue, can be approximately estimated by the average daily amount of urea secreted. Subacute nephritis and amyloid degeneration are also very commonly present in the same case, since both conditions may be due to similar causes. The composition of the urine and sediment are practically the same as in chronic diffuse nephritis, and the two cannot be distinguished from each other by the urine alone.

In albuminuria caused by renal disturbances, which are not due to organic kidney disease, morbid growths, tubercular disease or calculi, the renal conditions are usually spoken of as active hyperæmia or irritation of the kidneys, and passive hyperæmia. I have considered these conditions elsewhere,² and will only refer very briefly here to the character of the urine. In the active hyperæmia or irritation of the kidneys, the chemical composition of the urine varies, so far as the physical properties and the normal solids are concerned, according to the cause. The urine may be either concentrated or dilute, and the daily quantity of normal solids may be normal or diminished. The albumin is always very small in quantity, usually being present in the very smallest traces except in the very severe cases, catarrhal nephritis, when we may have from one-eighth to one-quarter per cent. for a few days. This quantity of albumin does not persist, however, for more than two or three days unless it develops into an acute nephritis. The character of the sediment is usually that seen during convalescence from acute nephritis, and it is often impossible to distinguish by the urine alone between a convalescence from acute nephritis and an active hyperæmia of the kidneys. With the clinical history in addition, however, there is usually no difficulty in making the differential diagnosis.

In *Passive Hyperæmia*, the physical properties and chemical composition of the urine also vary according to the cause. The albumin is present always in the very smallest traces except in rare cases of passive hyperæmia of pregnancy, when it may reach nearly one-quarter per cent. I have known this quantity of albumin to be present in cases of pregnancy followed by eclampsia, when no chronic disease of the kidneys existed, as was proved by the subsequent history of the cases; and in these cases the comparatively large percentage of albumin persisted for two or three months before confinement. The sediment in passive hyperæmia is composed of pure hyaline and finely-granular casts only, so far as the renal elements are concerned.

² See Boston Medical and Surgical Journal, May 12, 1892.

RÉSUMÉ.

To sum up briefly, and looking at the subject from a little different point of view, we see from the above, that an abnormally large quantity of urine is passed in advanced convalescence from acute nephritis, in chronic interstitial nephritis, in amyloid degeneration of the kidney, generally in chronic diffuse nephritis, and in some cases of active hyperæmia of the kidneys. An abnormally small quantity of urine is passed in the early stage of acute nephritis, both active and inactive stages of subacute (or chronic parenchymatous) nephritis, generally in active hyperæmia, and always in passive hyperæmia of the kidneys. Toward death, of course, we find an abnormally small quantity of urine in all forms of kidney trouble.

A large amount of albumin, by which I mean one-half per cent. or more, is found in the urine only in the early stage of acute nephritis, the active stage of subacute (or chronic parenchymatous) nephritis, and, sometimes, in the chronic diseases complicated with these. A moderate amount of albumin, about one-quarter per cent. we find in early convalescence from acute nephritis, in the inactive stage of subacute (or chronic parenchymatous) nephritis, in advanced chronic interstitial disease and in amyloid degeneration of the kidneys, generally in chronic diffuse nephritis, for a few days in severe active hyperæmia (catarrhal nephritis), and in very rare cases of passive hyperæmia of pregnancy. Only very slight traces of albumin are found in advanced convalescence from acute nephritis, in the early stages of chronic interstitial and amyloid disease of the kidney, and, generally, in active and passive hyperæmia of the kidneys.

Blood is found in the sediment, free and adherent to the casts, and often with blood casts, only in acute nephritis and active hyperæmia, or other affections which are complicated with these. Fatty elements, fatty renal cells, fatty casts, or oil globules free and on casts, are found temporarily in acute nephritis, being most abundant in the early stage of convalescence; during the whole progress of a subacute and chronic diffuse nephritis, and in some cases of long-continued active hyperæmia of the kidneys, generally, however, in very small proportion in this last affection. The presence of calculi in the renal tissue, or the existence of cancer or other morbid growths affecting the kidney, produce more or less parenchymatous inflammation in those portions of the renal tissue affected, and we will consequently find on examining the urine and sediment in such cases some evidence of the parenchymatous inflammation. Generally, the urine resembles that of an active hyperæmia of the kidneys, but we may find in the sediment, in addition, crystalline elements, if there is a concretion, varying in character according to the nature of the concretion, or in cases of morbid growths rarely pieces of the growth or cells from it. Tubercular disease of the kidneys causes suppuration, and may be detected by finding the tubercle bacilli in the pus.

AN ARKANSAS METHOD OF TREATING SMALL-POX. — A simple and effective method of stopping the spread of small-pox was tried in a rural district of Arkansas last week. A negro being found ill with small-pox in his cabin, the neighbors set fire to the house and burned it all up — small-pox infection, cabin and negro.

Original Articles.

APPENDICITIS: SOME IMPRESSIONS DERIVED FROM AN EXPERIENCE OF 44 CASES.¹

BY HOMER GAGE, A.M., M.D., WORCESTER, MASS.,
*Surgeon to the Worcester City Hospital, to the Memorial Hospital,
and to the House of Providence.*

OUR knowledge of the frequency and importance of inflammation of the vermiform appendix and its results dates back in this country to the paper of Fitz, read before the Association of American Physicians in 1886. From a purely pathological study, he demonstrated beyond all dispute, not that appendicitis was a new disease, but that it had always been the unrecognized cause of a great variety of acute abdominal diseases, hitherto classed as inflammation of the bowels, peritonitis, typhlitis and perityphlitis. His conclusions have been since then confirmed and strengthened by a constantly increasing surgical experience. Dr. M. H. Richardson, whose 281 cases lately reported represent one of the largest individual experiences, expresses the opinion that at least 90 per cent. of all cases of acute peritonitis occurring in young adults originate in an inflamed appendix, an estimate which is, I think, not likely to be diminished by further investigation. Dr. Richardson further expresses his firm conviction that "excluding certain zymotic diseases, it is the cause of more deaths than any other acute abdominal lesion." No surgical subject has within recent years attracted so much attention or given rise to so much discussion. Its frequency and importance have been strenuously urged on all sides, and very large and constantly increasing personal experiences have been reported. It is confined to no localities, to no conditions of life. The picture it presents is being recognized by the profession everywhere as an old acquaintance under a new name.

In spite of all the discussion, and the large experience so rapidly acquired, the problems created by the newly discovered pathology are by no means finally solved. No one can lay down any rules by which we can be governed in diagnosis, prognosis or treatment. We must, for a time at any rate, be content to be observers only. He who studies and observes much, finds his opinions changing so often that he is very reluctant to attempt the instruction of others. One opinion alone I find not changed but strengthened from the beginning, that is, as to the gravity and danger that exists in every case, no matter how mild it may appear to be. This one fact I would impress upon you; for the rest, I have preferred to give you briefly some impressions as they have been made upon my mind by the study of these 44 cases, asking you to remember that I regard them as impressions only, which are still subject to change, but from which further study and experience will, I hope, evolve more definite conclusions.

In the 14 cases in which the appendix was removed, a fecal concretion has been found three times, twice in the appendix itself, once in the bottom of the abscess cavity. I have never found any other foreign body present. In three cases, traumatism was the alleged cause, and in one the attack followed the ingestion of large quantities of grapes. In a very few instances, the attack was preceded by diarrhoea, with

¹ An address delivered before the Thurber Medical Association at Millford, Mass., February 22, 1894.

acute digestive disturbance; but for the great majority of all cases—I should say at least 75 per cent.—no cause could be assigned. I do not believe that the preponderance of males, in my own series 35 out of 44, can be fairly interpreted to indicate hard labor or exposure to injury as a predisposing cause. My own feeling is that the cause is usually to be found in the accidental retention in the appendix of larger or smaller fecal masses, and that their effect is determined by the kind and virulence of the bacteria present with them. Another determining factor is probably to be found in the congenital or acquired variations in the length, position and patency of the appendix. These variations are of still more importance from their effects upon the clinical history and symptoms of appendicitis.

The appendix is ordinarily from two to four inches in length, although considerable variations in both directions have been occasionally noted. Its base is fixed near the ileocecal valve, at the junction of the longitudinal striæ of the colon, and is therefore subject only to such changes in position as affect the cæcum as well. From this point, however, the appendix and its mesentery may lie in almost any direction, extending downward into the pelvis, transversely across the abdomen, with its tips reaching beyond the median line, or upwards on either side of or even behind the ascending colon. Its position, of course, fixes the location of pain and tenderness, which may, therefore, be found almost anywhere within the abdominal cavity. Many cases of appendicitis are thus the more readily mistaken for cases of peritonitis of idiopathic or unknown origin, a diagnosis that occasionally seems to be verified by a fruitless search for the appendix at the time of operation. Allow me to cite one example from my own experience.

E. E., grocer, thirty-five years old, patient of Dr. George F. Woodbury, was seen December 18, 1891. He had a history of a previous attack in August, 1891, since which time he had constantly complained of pain, chiefly epigastric, for which he sought counsel in Boston. Present attack came on suddenly in the night, and on account of absence of local signs, I advised delay, until on the 20th it was clear that a general peritonitis was impending. At the operation, peritoneum was everywhere injected and there were some fibrinous adhesions, but no pus and no appendix could be found. The patient died two days later; and at the autopsy, the appendix was found lying behind the cæcum and extending upwards about four inches, its tip resting on the right kidney. Its end was perforated, and pus could be squeezed out of its entire length, and had already formed a small abscess between the colon and the kidney.

Here was an appendix which had given rise to pain chiefly in the epigastrium, and which from its concealed position had almost escaped detection, and could not have been removed. I believe that the most favorable position for finding the appendix is when adherent to the iliac fascia or along the outer side of the colon. From these places it can almost always be removed, because the general peritoneal cavity can be more easily and more perfectly protected, and because the dissection can be prosecuted with a greater sense of security; one has a better view of the field of operation, and there is less danger of injuring important structures.

Dr. Richardson has lately raised the question as to

whether or not the appendix is always perforated, and expresses his "strong conviction that in all severe cases, and, in fact in all cases where there is a localized peritonitis there is a larger or smaller perforation with extravasation." Without wishing in the least degree to question this statement, it seems to me that there must be a few exceptions. I have twice removed appendices in which no perforation could be discovered by the naked eye or by the probe. (Both specimens are shown here.) The first is from a man who had had three previous attacks, and whom I operated upon forty-eight hours after the beginning of the fourth. Upon separating an adherent mass on the inner side of the colon, I succeeded in isolating the appendix, which was very much thickened, its surface red and slightly injected. There was no pus. Immediate improvement followed its removal. The second is from a young man who had been sick five days, complaining chiefly of pain in the right iliac region. The appendix was found non-adherent, somewhat thickened, with a bulbous tip, which was directed forward against the abdominal wall, and corresponded with the point of maximum tenderness. Microscopical examination of its contents showed that it contained a fecal concretion with a small amount of pus. In both of these cases, the inflammatory process, which always begins from within, in the mucus membrane, had extended outward, involving successively all the coats of the appendix and ultimately would have perforated it, perhaps. Neither perforation nor extravasation had, however, taken place up to the time of my interference. The first was certainly one of the severest and most threatening of my cases, and the second was rather a late operation.

The most important pathological factor is, I think, the limitation of the process by protective adhesions. They may be formed by the adherence of adjacent coils of intestine, by the envelopment of the appendix in a fold of omentum, or by its adherence to the iliac fascia, or along the outer side of the colon, as before mentioned. At any rate, the result is a localized abscess, which may or may not be adherent to the abdominal wall. Should extravasation take place before the formation of adhesions, a general infection follows, and the case cannot be distinguished from what has always been called idiopathic general peritonitis.

The typical case of appendicitis presents a picture so familiar to us all as to require but little attention. A child or young adult suddenly seized with abdominal pain and vomiting, the pain at first general, then more marked in the right iliac region, accompanied by tenderness, and in the course of time by the development of a bunch. This is the type, from which, however, there may be wide variations. The onset is almost always sudden. Chills or chilly sensations may be present, but are just as often wanting, even when suppuration has taken place. Vomiting is often, though not necessarily, an early symptom, and when present usually ceases with the localization of the inflammatory process. Its continuance, especially if changing to simple regurgitation, is always ominous. I have, however, recently had two cases in which, after the removal of the appendix and drainage of the abscess, vomiting of a thin, dark-green fluid persisted for several days, both patients ultimately recovering.

The pain is at first general and then local. It may be very severe, or quite moderate, in cases which at operation present very similar conditions. Its loca-

tion is, I think, of but little value, because the position of the appendix varies within such wide limits. Absence of localization is important as indicating a more general infection of the peritoneal cavity. Tenderness, like pain, may be general or local, and in any part of the abdomen. With the appendix in its ordinary place, the point of maximum tenderness is, as indicated by McBurney, usually to be found midway between the anterior superior spine and the umbilicus. The exceptions to this are, however, nearly as many as the observances, and I think McBurney's point as a diagnostic sign should be altogether discarded.

Dulness, when present, helps to the localization of the inflammation, but its absence is entirely without significance. Its value in any case is extremely limited. Abdominal distention, especially if general, is, I believe, one of the most dangerous symptoms. Fortunately, it is not an early one, and can generally be anticipated by operation. Its presence not only indicates a more or less general peritoneal infection, but also offers a serious obstacle to the mechanical part of the operation. The effect of its full development I shall refer to again.

Temperature I have come to regard as of but little value in indicating the nature or severity of the attack. I have operated in the face of a normal temperature for two days, and found a foul abscess with double perforation of the appendix, and, on the contrary, with a temperature of 103° , have found no pus, and simply an inflammatory thickening of the appendix. It is certainly a much less reliable guide than the pulse, and I am inclined to agree with Elliot that many of the most serious cases have a normal or nearly normal temperature.

One of the most interesting problems in connection with the clinical history of these cases is their tendency to recur. How great that tendency is cannot yet be accurately stated. Fitz found it in 11 per cent. of 257 cases. Out of the 44 cases which furnish the basis of my paper, 12 gave a definite history of two or more attacks. It is safe to say that in the very large proportion of cases the first attack is the last, but that after one or more recurrences others may be pretty certainly expected; and one thing is, I think, pretty definitely settled, namely, that one can never tell how severe the next attack may prove. A patient who has had one or more recurrences is in constant danger of an attack so severe as to be beyond surgical help from the outset.

One word about the differential diagnosis: it is not always easy to distinguish appendicitis from other acute abdominal affections. When the local symptoms are not clear, internal strangulation, twists and intussusception, with other forms of intestinal obstruction, must be carefully considered, and the operator must, of course, be prepared for any one of them. Dr. Richardson reports two cases of strangulation in omphalo-mesenteric remains which were mistaken for appendicitis. In one case of suspected appendicitis which I saw with Dr. W. E. Paul, then of Southbridge, and which he has lately published in the *Boston Medical and Surgical Journal*, operation was deemed inadvisable because the patient was already moribund. Autopsy revealed a hæmorrhagic pancreatitis as the cause of death. Many of these conditions can be eliminated only by exploratory incision, bearing in mind always that in healthy young adults, especially males, a sudden attack of acute abdominal pain,

with attendant symptoms pointing to the development of a local or general peritonitis, means in the great majority of cases an inflamed appendix.

In considering the management of these cases, let me say a word first about medical treatment, especially treatment by salines, so strenuously urged by Dr. Gordon, of Portland. Since the revival of saline treatment of peritonitis by Tait, we have all seen at times in appropriate cases most satisfactory results. The theory of its benefit, as suggested by all of its admirers, as well as by Gordon, lies in its depletive effect, not only upon the general, but also upon the portal circulation; the free watery dejections at the very beginning of the trouble are believed to cause the absorption of exudates before they have a chance to undergo decomposition, and also to subdue inflammation by their local depletion of the blood-vessels. The advantages of this method are obvious if its safety can be demonstrated. The dangers are from the breaking down of protective adhesions by increased peristalsis, and from favoring the extravasation of the intestinal contents through the perforated appendix. The first objection is, perhaps, somewhat theoretical; but the delicacy of the adhesions, and the ease with which they are ruptured during most careful manipulations, are familiar to all who have seen early operations. I have seen one case in which the adhesions which separated a localized abscess in a child were ruptured during sleep, and another in which in a young adult the rupture took place during an effort at stool; in both cases the disappearance of the local swelling was accompanied by collapse, rapidly progressing general peritonitis and death. In the second case, the abdomen was opened ten hours after the accident, a large quantity of pus lying free in the abdominal cavity evacuated, but too late to be of any service. This danger is not only theoretical, but real and very much to be feared. That salines may promote further extravasation of intestinal contents through the perforated appendix is denied by Dr. Gordon, on the ground that at the onset of the attack communication is shut off between the cæcum and appendix by closure of the natural opening. His statement is unsupported by any anatomical demonstration, and is contradicted by the published records of almost all the leading authorities upon this subject. At the recent meeting of the Surgical Section of the Suffolk District for the consideration of this subject, Drs. Richardson, Beach, Cabot and Elliot all testified to finding fæcal matter in peri-appendicular abscesses and in the appendix itself, and at least two of them testified to having seen gas and intestinal contents escape from the perforation at the time of operation. I have myself found fæcal matter in the appendix, and have twice after ligation and removal of the appendix, where there was no possibility of cæcal perforation, had fæcal matter discharged through the drainage-tube on the first two or three days, and not thereafter. I believe it can be accounted for only on the ground of direct communication between the cæcum and appendix. In spite of its advantage, therefore, I believe the indiscriminate administration of salines in appendicitis is attended with the gravest danger. I have once or twice resorted to salines, or, preferably, other laxatives, but only in the most guarded way, and in cases where I felt reasonably sure that perforation had not taken place.

For the mildest cases, and where for any reason

temporizing has seemed best, I believe the old-fashioned treatment by rest, opiates and hot applications to be the safest. The so-called simple catarrhal inflammation without perforation will improve as quickly and as surely under this as under the more active methods, the only danger is in concealment of graver symptoms which might demand interference by the opiates, and this has the advantage of being entirely within our control.

It is as impossible with our present knowledge to determine what proportion of cases will recover under such palliative measures as I have just described, as it is to lay down any rules for surgical interference. We do know that while a very considerable proportion of cases recover perfectly and permanently without the necessity of interference, an equally large number, beginning in precisely the same way, quickly develop most dangerous symptoms, which demand at once prompt incision and exploration. Until we discover some way to distinguish at the outset between these two classes, it is natural that those whose experience has been more largely with the severe type should prefer and advocate immediate operation as soon as the diagnosis is established. It is argued that the danger from an operation at such a time is extremely small and that the conditions have not yet been complicated by the presence of large exudations and by strong adhesions, so that they are more easily recognized and more securely dealt with. The argument has much to commend it, and I think there can be no question that the trend even of the most conservative surgical opinion is towards a more rather than a less radical procedure. We are, however, but in the infancy of our knowledge of this subject, and I feel hopeful that we may some time be able to draw at least a sharper line between those cases whose natural tendency is to recovery and those which are destined to progress. There is at best some risk of disseminating an inflammation which nature has attempted to localize, and much danger of weakening the abdominal wall, a very serious consideration, especially to the laboring class. I have not therefore, as yet, been convinced that operation is always to be advised at the very beginning of the attack, and yet in some cases I should propose it unhesitatingly, especially in those where a general peritonitis seemed imminent.

I wish I might be able to give you the exact reasons which govern me in forming such a conclusion, but I cannot. Impressions, even if founded on experience, which cannot be formulated into words, are, I know, most unscientific and unsatisfactory, perhaps, often unsafe guides; but they exist, and I cannot yet at all accurately describe them.

Whenever vomiting continues and is accompanied by any suspicion of increasing distention after the first twenty-four hours, I am sure that interference cannot be proposed too quickly. It generally indicates a greater or less tendency to general peritoneal infection, and its persistence is a symptom of very grave import. The more nearly does it approach a condition of regurgitation, the graver does it become. In these cases, operation must be done in the very beginning, to be of any value. Patients who are regurgitating a dark-greenish fluid, even if not stercoraceous, and whose abdomens are much distended, are the worst possible subjects for operation. I have operated now four times under such conditions, and always with fatal result. Whenever general peritonitis is threatened, operation

must be done within the first twenty-four or forty-eight hours, and even then may be too late to avert death. After full development, operation is, I believe, counter-indicated, and the chance of a favorable result lies in the use of salines or other purgatives, with opiates enough to secure quiet. These are the cases in which the rectal tube, turpentine, enemata and other means for the relief of distention are indicated. In all cases of acute appendicitis, with or without localized symptoms, where a general peritoneal infection is feared or its beginning suspected, the time to consider surgical interference is, I believe, at the very outset. It is then that any delay is most dangerous. When fully developed, it is, I believe, almost always too late. The shock of ether, and the increased manipulation made necessary by distention of the intestine is almost always fatal, and if left to nature, such cases may occasionally recover. I have recently twice had that fortunate experience.

When after the first onset the symptoms become definitely localized with the formation of a tumor, and with a definite sense of local resistance and tenderness, delay may be less dangerous, and the appropriate time for interference is always more difficult to determine. Should the local conditions decidedly improve on the second day, it is, I think, fair to infer that nature will effect a complete restoration, or that she has, at least, succeeded in setting up a temporary barrier to the extension of the inflammation. I believe that there are many cases in which the improvement in physical signs, as well as in constitutional symptoms, is so rapid and so decided that interference, if proposed at all, is to be considered only as a safeguard against possible recurrence. In the great majority of these cases of acute appendicitis, where the process is distinctly localized, I believe the most favorable time for interference is as early as the third day. The risk of delay seems to me much greater than the danger of early operation. The second and third days eliminate the mildest cases; the others may assume a far more dangerous aspect with little or no warning. Even as early as this a gangrenous condition of the appendix may be found, around which an abscess has already been formed. This has been the condition in three of my cases.

The first, N. C., male, seventeen years old, was seen in consultation with Dr. J. O. Marble, of Worcester, on the 30th of January, 1893. The attack began with severe abdominal pain and vomiting on the 28th, and I operated sixty-four hours later, that is, on the third day. His pulse was 120, temperature 102°, and his general aspect was exceedingly bad, though he professed to feel better. Upon opening the abdomen, I came at once upon a mass of gangrenous omentum, the meshes of which were infiltrated with pus. Just beneath this was an abscess cavity, containing about four ounces of very foul pus, lying in which was the appendix, perforated about two inches from the cæcum and gangrenous about the perforation. (Specimen shown.)

Again on May 3d, I operated on Mrs. M., twenty-seven years old, a patient of Dr. F. G. Fay, of Worcester, who had been suddenly seized with acute abdominal pain on the evening of the 30th of April; the operation was, therefore, on the third day. The general peritoneal cavity was opened and a mass of adherent coils of intestine found in the cæcal region, not adherent to abdominal wall. On separating the adhe-

sions, about two ounces of pus was evacuated, and the appendix found perforated and gangrenous. (Specimen shown.)

On October 3d, I operated upon A. W., male, twenty-one years old, who was referred to me by Dr. Leonard White, of Uxbridge. His attack began suddenly on the morning of the 20th. Incision revealed pus just below the cæcum, with a much thickened appendix, so adherent that it was torn across at the point of perforation, and only about one inch was removed. The rest was ligated and left.

These three cases illustrate the severe conditions which may be found as early as the third day, even when the inflammatory process has been definitely limited by adhesions. I believe all would have been more difficult to manage, and more dangerous to the patient had there been even twenty-four hours longer delay. As it was, all recovered.

The most serious objection to early operation is the danger of breaking down adhesions, and defeating nature's attempt to localize the peritoneal infection. Larger experience and greater familiarity with the conditions to be found must diminish very much the force of this objection. It is also, I think, far outweighed by the greater facility in operating, the greater ability of the patient to withstand shock in the early stages, and by the increased chance of doing a thorough and complete operation. I am one of those who believe that the operation is every way more satisfactory when completed by the removal of the appendix, and that whenever possible this ought to be done. I am sure that when it can be done without too great violence to the adhesions, convalescence is established more quickly, is less liable to interruption and recovery is much more certain to be permanent and complete. I have accomplished it now in 14 cases, with 13 recoveries. The only death was in the first case in which I removed it. I would not, by any means, convey the impression that its removal should always be attempted. In the ordinary late operation, it cannot often be found, and even when found, its removal is usually impossible, so tough and firm are the adhesions in which it is imbedded. It is to be undertaken only in early operations, when the adhesions are light and easily separated, and when the general peritoneal cavity can be fully protected. In cases thus properly selected, the removal of the appendix makes a more finished operation, adding very little if any to the immediate danger, and adding much to the rapidity and permanency of the recovery.

So, also, with regard to the omentum, when it is found wrapped about the appendix or involved in the mass of adhesions, if it is gangrenous, or infiltrated with pus, or engorged with extravasated blood, so that it looks like a piece of liver, I would always ligate and remove it. I have done it for all of these conditions, without in any way complicating the operation, and I think it removes a source of considerable danger.

I have not spoken of the operation between the attacks, because my own experience has been entirely with acute appendicitis. In recurrent cases, I believe most heartily in operating during the interval of quiescence, but I have had no experience of my own. In two operations done during exacerbation, in cases of recurrent or chronic appendicitis, I have, however, seen conditions which I have found nowhere described and which seem to me exceedingly interesting.

This first was in a boy thirteen years old, who in

the preceding four months had had several attacks of appendicitis with very short intermissions, and who for a month past had had a small hard tumor, very tender, in the right iliac region. Each attack would begin with pain in the region of the tumor, vomiting, and a temperature rising to 101° or 102°. With rest in bed, counter-irritation and careful attention to diet, each attack would quickly subside, but the bunch had remained. I saw the boy during one of these exacerbations, regarded the case as one of localized abscess, and, as he was a near relative of mine, I asked Dr. M. H. Richardson, of Boston, to perform the operation. He, too, was convinced of the presence of pus, but incision revealed a hard mass of firm, tough adhesions, which were separated so as to expose the cæcum, but no pus and no appendix were found. The cavity was packed with gauze, and healed without suppuration, the boy regained his former health and strength, the bunch entirely disappeared, and there has been no recurrence during fifteen months that have passed. In October last I had an almost precisely similar experience in a Swede twenty-seven years old, who had symptoms off and on for eight weeks, with a well-defined tumor for at least a month. I operated in the midst of an exacerbation, found no pus, and only a hard mass of inflammatory exudation, imbedded in which was the cæcum. So firm were the adhesions that I did not dare attempt their further separation to search for the appendix. The man made a good recovery and has remained well.

These cases illustrate the difficulties that may be met with in what promise to be the simplest operations, and they are especially interesting to me, because I cannot understand the conditions which have caused them, nor the apparently beneficial effect of exposing and disturbing them.

With regard to the results in cases of appendicitis, very little can, I think, be learned from any one individual experience; and until we have some accurate method of classification, we can learn little from the study of compiled statistics. Of my own cases there were 12 not operated upon, 5 of whom died; 4 were in a condition which seemed to me to render operation useless, and the 5th died from internal rupture of the abscess. One of the cases that recovered, died three months later from a recurrent attack. In the 32 operations, there were 25 recoveries and 7 deaths. Of the latter, five were from the continuance of general peritonitis which was present at the time of operation, one was from pyæmia in a late operation upon a large localized abscess, and one was after an operation done for rupture of an abscess into the general peritoneal cavity.

In the 25 cases that have recovered, I have as yet had no rupture through the cicatrix of the wound. I believe, however, that this is only because sufficient time has not yet elapsed; that hernia will come in some at least, I feel perfectly sure. It must come, especially in those cases where drainage has been used. It is less likely to occur in the early operations where drainage can be dispensed with, but even then it cannot be wholly avoided. Some firm support ought always to be worn for years after the operation, and the thought that we are thus permanently weakening the abdominal wall, and imposing upon a man a great inconvenience if not positive danger, ought to make us exceedingly careful to avoid unnecessary interference.

Fæcal fistula is another occasional sequel of opera-

ion. I have had one fistula that persisted for seven months after the operation, but has finally closed spontaneously. It was in a case of late operation, where the appendix could not be removed, and the abscess was simply opened and drained. It is a great annoyance to the patient and to the physician, but will almost surely heal of itself, and rarely requires operative interference.

In conclusion, allow me to repeat that we can draw no hard and fast distinction between those cases which will require operation and those which will not. I feel in almost as much doubt as ever each time that the question is presented to me. There are one or two points, however, that increasing experience has impressed more and more strongly upon me, and they are the only definite conclusions which I can present. They are: (1) appendicitis is one of the most important as well as one of the most dangerous of all acute abdominal affections; (2) that some cases are fatal from the very nature of the initial attack; (3) that some have a natural tendency to recover; but (4) finally, that the great majority can be relieved only by surgical interference, and that early operations are in every way less difficult and less dangerous than late ones. In the majority of cases, the presumption is in favor of early operation, and unless distinctly counter-indicated the earlier the better. A surgeon seldom regrets an early operation, but is often disappointed by delay.

PRIMARY NASAL DIPHTHERIA.¹

BY CHARLES W. TOWNSEND, M.D.

THAT nasal diphtheria is a severe and often fatal disease, and that it is almost always secondary to diphtheria in the throat, is the generally-received idea both from practice and text-books.

Thus Dillon Brown, in Starr's "Text-Book of Children's Diseases," just published, says: "In the nares diphtheria is very serious, on account of the abundant lymph and blood-supply," etc.

W. Gilman Thompson, in Pepper's "American Text-Book of the Theory and Practice of Medicine," also just published, says: "Cases of nasal diphtheria are apt to end fatally unless vigorously treated."

And J. Lewis Smith says, in Keating's "Cyclopædia of Children's Diseases": "Nasal diphtheria involves great danger, from the fact that it is likely to give rise to systemic infection of a grave type." Lower down he says: "Although commonly diphtheritic inflammation of the nasal surfaces is secondary to that of the fauces, it is sometimes the primary inflammation. It may exist for some days before the fauces become affected, and under such circumstances the diagnosis is frequently not made until the disease is in an advanced stage and profound blood-poisoning has occurred."

That mild primary cases sometimes occur, the mildness of whose symptoms may permit them to go unrecognized, is a point I wish to emphasize, and particularly the fact that these cases are of great danger to the public health.

Dr. A. L. Mason² refers to these cases when he says: "Primary nasal diphtheria is probably more

common than is supposed, and a not infrequent source of unsuspected danger." Jacobi also alludes to them; and Major³ reports five cases very similar to those I am about to relate. The latter says of nasal diphtheria: "When of a *primary* nature, it is very likely to be overlooked altogether." It seems probable that some cases formerly supposed to be membranous rhinitis were in reality nasal diphtheria.

During the months of November, December and January of this winter fourteen cases of diphtheria occurred among the patients of the Children's Hospital, all but two of which came under my charge in the isolating wards.

The bacteriological examinations were made for the hospital by Dr. J. H. McCollom at the Harvard Medical School, and, it is unnecessary to say, were of the greatest value.

There were seven cases where the nose was affected; in six cases the disease was limited to the pharynx; and in one case an old tracheotomy wound was attacked, the disease spreading to the bronchi and rapidly proving fatal.

The six pharyngeal cases I will pass over briefly. They illustrate the well-known difficulty and oftentimes the impossibility of making a diagnosis of diphtheria from gross appearances or symptoms. They were all mild cases; all recovered. One of the earlier cases began with coryza, and had a nose-bleed on the day preceding the beginning of the throat affection; and although there is no positive proof of nasal diphtheria from the absence of cultures from the nose in this case, it is extremely probable, in view of the other cases, that this one was originally nasal diphtheria, and as such was overlooked.

Of the seven nasal cases of diphtheria, in five the disease was primarily nasal, being confined to the nares alone in four, in one extending later to the pharynx and larynx, while in the remaining two cases the disease was at first pharyngeal, and later involved the nose. These last two cases represent the secondary nasal forms more commonly seen, partly from the fact that the diagnosis of the trouble in the throat having been made, it is natural to suspect an extension to the nose in case there is a nasal discharge, and to look for membrane there, and partly because secondary nasal diphtheria is usually a very severe disease.

The primary nasal cases are easily overlooked; the diagnosis frequently cannot be made without a bacteriological examination, and they are particularly dangerous as sources of infection from these causes, and from the fact that the bacilli may be retained for a long time on the voluminous mucous membrane of the nose after the patient has apparently recovered, and may even at times elude the search of the bacteriologist, as some of my cases show.

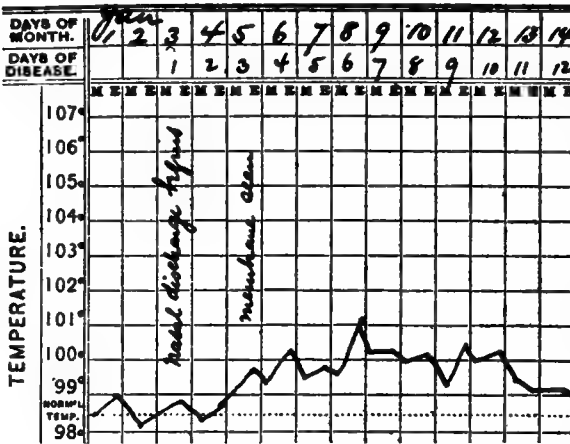
CASE I. A boy, four years old, began to have a nasal discharge on January 3d. This increased on the following day, but there was no rise of temperature, and the pulse showed no weakness. The nasal discharge was watery and at times muco-purulent, and was not offensive. On the third day of the coryza careful examination showed some gray membrane in each nostril, and a bacteriological examination demonstrated the Klebs-Löffler bacillus. There were nose-bleeds from time to time. The temperature, as will be seen by the chart, remained between 99° and 100°

² Diphtheria and Scarlet Fever at the Boston City Hospital. Bulletin 4, Harvard Medical School Association.

¹ Read before the Boston Society for Medical Improvement, March 12, 1894.

³ Burnett: System of Diseases of the Ear, Nose and Throat, vol. 1, p. 370.

until the twelfth day of the disease, going once to 101°, the child feeling meanwhile well enough to be up. Examinations by cultures taken from the nose



CASE I.

by the platinum wire were made from time to time, and the Klebs-Löffler bacilli were still found on the thirteenth day, or three days after the temperature had dropped. On the fifteenth day, the day following the cessation of nasal discharge, a culture was taken and no bacilli found.

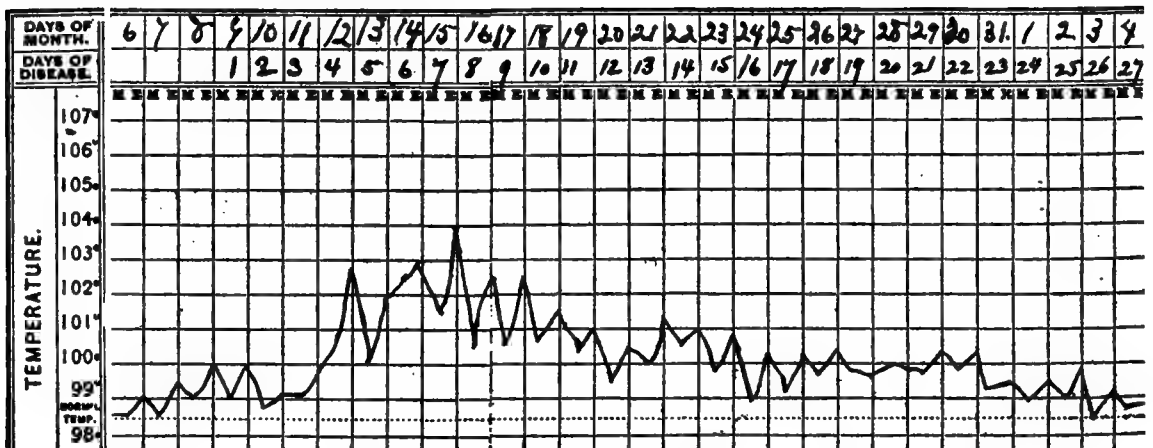
The child was not allowed to go home until six days later, or a week after the cessation of the nasal discharge, but the sequel shows he still retained some of the Klebs-Löffler bacilli in his nose. Shortly after returning home, a servant, who had not been away for

ure was at once taken from his nose, and the Klebs-Löffler bacilli were found. On the following day a little membrane was visible, and there was a watery discharge from the nose. On the third day there was apparently nothing the matter with him but a bad coryza. No more membrane was seen, and the temperature came to normal on the fifth day. On this day the Klebs-Löffler bacilli could not be found. No subsequent cultures were taken, but it is probable that the bacilli would have been found for some time in his nose.

CASE III. A girl, seven years old, again illustrates the purely nasal forms. During the first week a thick, glistening, gray membrane was plainly visible in the nose, and the patient suffered from nose-bleed twice. The Klebs-Löffler bacilli were found until the fourteenth day of the disease, on which day the membrane disappeared from sight. As will be seen by the chart, the temperature continued between 99° and 100° for twelve days after the disappearance of the membrane. She was not discharged from the hospital until all signs of nasal disease had disappeared and the last bacteriological examination was negative.

Two or three days after her return home her mother was taken sick with diphtheria, recovered, but died suddenly a week later with, as far as could be learned, suppression of urine.

CASE IV. Girl, two and a half years old, began with a cold in the nose, and at the same time some white circumscribed pin-head spots appeared on the tonsils, but entirely disappeared within forty-eight hours. The diphtheritic bacilli were found in these apparently follicular spots, as well as in the nose. Membrane then appeared in the nose, and there was



CASE III.

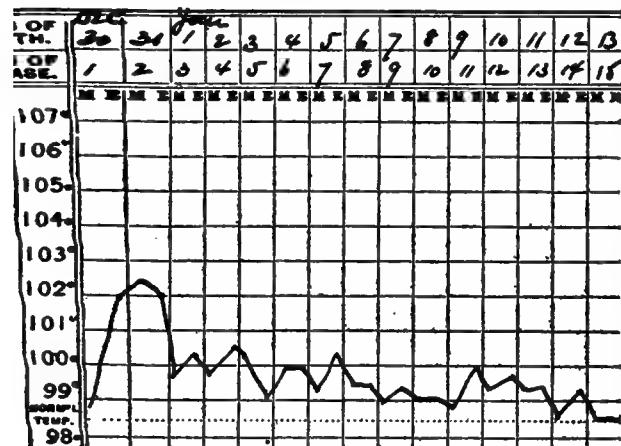
over three weeks, came down with diphtheria. That the child's nose was the probable source of infection was proved by the fact that the specific bacilli were discovered there when he presented himself at the clinic four weeks after his discharge from the hospital, and over five weeks since his apparent recovery. At this late date, however, a nasal discharge was present, having started up after leaving the hospital.

CASE II. A boy, four years old, was the mildest case of all. He was kept isolated in the main hospital, not coming under my charge; and I am indebted to the courtesy of Dr. Bradford for permission to include it with the others. The child began with coryza and nose-bleed and a temperature of 101.8°. A cult-

some sanguino-purulent discharge for a day or two. After this the discharge was slight and muco-purulent or watery, coming and going like an ordinary coryza. At no time after the first three days could one have made from the gross appearances any other diagnosis than a coryza, as there was no membrane to be seen. Except on one occasion, the Klebs-Löffler bacilli were, however, found at every examination, which was on alternate days, until the twenty-sixth day of the disease, and there was some muco-purulent discharge at intervals until the twenty-third day. The temperature, as will be seen by the chart, started off at first as if in correspondence with the apparent follicular tonsillitis, and then ranged from the third to the

fourteenth day between 99° and 100°, remaining normal after the fifteenth day.

The pulse showed but little evidence of weakness,



CASE IV.

except of an occasional slight nasal obstruction, the child appeared perfectly well after the first four days, and at home would have been, if the diphtheria were unrecognized, an active spreader of the disease.

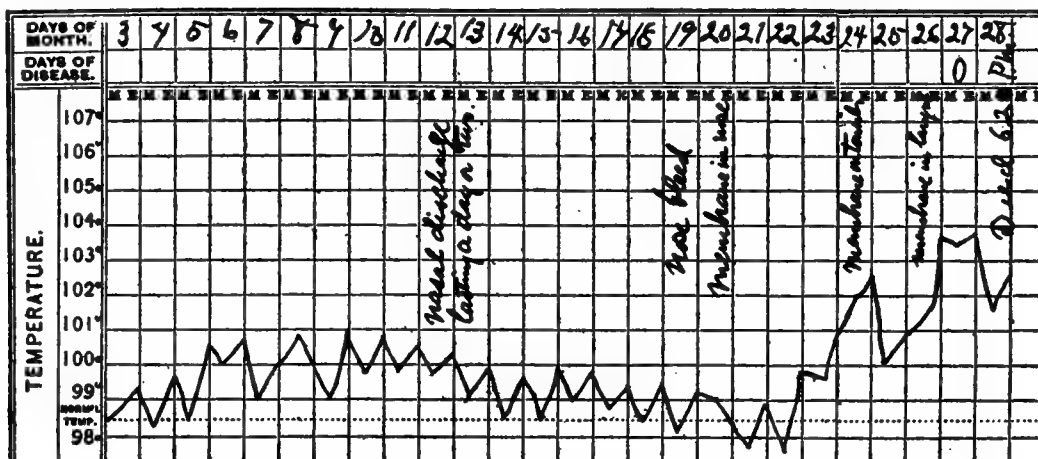
For the sceptical, as to the value of the bacteriological method of diagnosis, the following case is of interest, for its later violent course confirmed very fully the early bacteriological diagnosis. This was the only primary nasal case in which there occurred an extension of the membrane from the nose.

CASE V. A boy, six years old, said his nose was

An examination of his temperature chart is interesting. The child was in the hospital for a stiff knee, and there was no active process going on there to cause an elevation of temperature. It will be seen that for a week before the first temporary nasal discharge occurred the temperature was elevated about 100°. This is certainly suggestive of a beginning of the nasal diphtheria at this time. Another interesting point is the normal and subnormal temperature for three days following the appearance of the membrane in the nose and the discovery of the specific bacilli.

The continued slight elevation of temperature between 99° and 100° seen in several cases when the disease is confined to the nose is interesting. In the following case this continued for a month after the membrane had disappeared from the portion of the nostrils easily visible. With this temperature in bed, the patients seemed to feel perfectly well. If they had been about, they would very likely have shown evidences of debility by feeling tired and irritable. The early history of this case is very suggestive as regards the "follicular tonsillitis."

CASE VI. Boy, six years old, had an attack of what appeared to be follicular tonsillitis on October 15th, lasting five days. No bacilli could be found. On November 2d he again complained of sore throat; his tonsils were swollen and covered with white spots. Again no bacilli could be found. A failure to carry the wire to the bottom of the crypts may have accounted for this, and it is possible that these were in reality mild attacks of diphtheria. On November 20th began a third attack, apparently similar to the others, but the Klebs-Löffler bacilli were found. This time the spots coalesced, spread to the uvula, and pre-



CASE V.

sore on January 12th. There was a slight discharge at this time, which dried up in a day or two, and nothing was thought of it. Seven days later he had a nose-bleed, and on the following day glistening white membrane was discovered in one nostril, and a nasal discharge began. An examination on this day showed the Klebs-Löffler bacilli. Two days after the membrane appeared it spread to both nostrils, and again two days later both tonsils and the posterior wall of the pharynx were rapidly covered with the membrane. Again, two days later, evidence of laryngeal infection was shown by the croupy cough; and although intubation was performed by Dr. Goldthwait, the patient died on the following day.

sented the clinical appearance of diphtheria. A week later the membrane was seen in the nose; but it disappeared from there on December 7th, and from the throat on December 16th. A slight nasal discharge continued at intervals, and the bacilli continued to be found in the nose for a month after the membrane ceased to be visible. The temperature ranged from 100° to 102° for the first three weeks of the disease, and from 99° to 100° during the last three weeks, during which time no membrane was visible.

The child was discharged from the hospital apparently well over a month after membrane had disappeared from sight, and nearly a week after a bacteriological examination failed to find the Klebs-Löffler

bacilli. The terrible bacilli were still concealed in his nose, however, and would undoubtedly have been discovered if he had been retained longer in the hospital and more examinations had been made. The lapse of a month since the disappearance of the membrane, his apparently complete recovery, as well as the fact that the last bacteriological culture was negative, served to justify his discharge. He was given an antiseptic bath and a complete change of clothing.

Eight days after his return home to a neighboring town the child's sister developed a violent case of diphtheria, the membrane spreading to the nose, roof of the mouth, pharynx and larynx, and proving fatal on the tenth day. The mother and older sister also contracted diphtheria and recovered. There had been no cases of diphtheria reported in the town for two months before this, and but one since. The parents had not visited the diphtheria wards at the hospital for five weeks before the little girl's sickness.

It would seem as if the boy from whom these cases spread had acquired an immunity from the effects of the disease by the length of time in which he harbored the bacilli. That the virus had not become attenuated by its long stay in this individual was proved by the virulence of its action in the fatal case.

CASE VII was of the usual type of secondary nasal diphtheria. The patient was already very sick with surgical sepsis, which obscured the symptoms of diphtheria. The case proved fatal.⁴

All but one of the nasal cases had nose-bleed, slight or severe, at some time in the course of the disease, often when no membrane was visible. Only two of the others had nose-bleed, and in one of them, as I have already remarked, nasal diphtheria is strongly to be suspected. A swelling of the cervical glands in these cases was not noticed.

The source of these cases of diphtheria it is not difficult to trace, as there had been free intercourse between the patients at different times. The habit of picking the nose, so common among children, must furnish an easy method of infection.

By way of summary, the following points seem to me to be of interest:

(1) The fact that primary nasal diphtheria may occur of a very mild type.

(2) The dangerous character of these cases, as they are likely to go unrecognized for the following reasons:

(a) The resemblance of these cases to ordinary coryzas, a membrane not being noticed in some cases except by careful scrutiny.

(b) The normal or only slightly elevated temperature often present, with but little constitutional disturbance.

(c) The intermittent character of the nasal discharge, absent for several days, and then starting up again.

(d) The apparent recovery, even with cessation of nasal discharge, while Klebs-Löffler bacilli are still present.

(e) The fact that these bacilli have not lost their virulence; or, in other words, the fact that the patient having the bacilli in his nose, although apparently well, may transmit the disease in a fatal form to others.

(f) The difficulty of always finding the bacilli in the nose, even when they are present.

⁴ Since going off duty on February 1st five cases of diphtheria have occurred at the hospital, four being of the mild nasal type.

(3) The importance of bacteriological examinations in all suspicious cases of nasal discharge.

(4) The importance of prolonged isolation, together with a refusal to consider a case cured until several consecutive negative cultures have been obtained.

A CASE OF AMOEBIC DYSENTERY.¹

BY C. F. WITHERINGTON, M.D., ROXBURY, MASS.

THE patient, Olaf Nilson, was a native of Norway, aged thirty-four years, unmarried. He gave his occupation as that of a longshoreman, and seems to have done various sorts of work about the wharves in several seaport cities of this country. When more distinctly maritime occupations failed, he had, among other things, tended bar.

For the six months prior to the middle of February he had been in the South, the first half of the time (or a little more) in Pensacola, the rest of it in Mobile. He had also worked for a while in one or both of these cities on previous occasions.

Up to two weeks before entrance to the hospital he avers that his health has always been perfect, except that he had measles in childhood and occasional headaches since. Yet, as he expressed himself, up to the present illness, nobody had ever been stronger and in better health than he. His mother died of dropsy, and a brother of the "falling sickness"; three sisters and two brothers are alive and well.

Coming, then, from Mobile to New York, he was suddenly taken about the time of his arrival with chills, which have recurred since. He thinks he has been feverish, and diarrhoea appeared coincidently with his first chill. At present he says he has about ten movements a day, which is not as many as he had at first. The stools have been dark-brown and bloody. He has lost weight rapidly. Pain is not complained of.

On his entrance to my service at the City Hospital, March 1st, I found him a man of large frame, a good deal emaciated, with a dusky face; temperature, 97.5°; pulse 116, fair quality. Examination of liver, heart and lungs was negative. There was slight abdominal tenderness. The splenic dulness began at the seventh rib, but the margin was not felt. He had the odor characteristic of chronic diarrhoea, and seemed a very sick man. The movements were ten to twelve in the twenty-four hours, and were not involuntary. The stools were fluid and smooth, about the consistency of thin cream, of a reddish-brown color, and of not an unusual odor. There was no mucus nor masses of bright red blood; and in these respects the stools did not present the appearance of the common type of dysenteric colitis.

A specimen was therefore sent to Dr. Councilman for examination for *amoeba coli*, and its discovery was at once made by him.

The patient was treated at first by a dose of oil, followed by starch and laudanum injections, and as soon as the presence of the amoeba was reported the laudanum enemata were replaced by rectal douches of quinine (gr. xvi in a pint of water). They were, however, retained but a short time, and no improvement was observed from their use. The patient failed steadily, and died in the night of March 3d, about

¹ Read before the Boston Society for Medical Improvement, March 12, 1894.

seventeen days from the beginning of his illness, if his history of the invasion is correct.

The temperature remained generally subnormal, only once reaching 99°; and the respirations gradually quickened toward the end.

Clinical Department.

SCARLATINA WITH PERSISTENT HIGH TEMPERATURE, ASSOCIATED WITH WILD DELIRIUM, FINALLY CONTROLLED BY GUAIACOL.

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

THERE were four children in the family, none of them having had scarlet fever, and the manner of infection could not be learned in this case.

The eldest child, age seven years, came home from school one night feeling badly and complaining of nausea. The next day there was vomiting and complete loss of appetite. On the third day, there being no change for the better, I was called in the evening.

The child at that time was lying quietly in bed, and the nausea was not so troublesome. The skin was covered with a mild eruption of scarlet fever. Throat slightly reddened. Parents had not noticed the eruption before, so the time of its appearance is unknown. Treatment: aconite, warm-water sponge-baths, liquid diet.

Fifth Day.—At the morning visit the eruption was well marked all over the body. Child had been very restless and delirious all night. Tonsils enlarged and covered with grayish membrane. Temperature 105°. Treatment: cold-water sponge-baths, phenacetine (grs. iiii every three hours), tincture ferri chloride (gtts. v four times daily for local effect), peroxide-of-hydrogen (15 volume) spray for throat and nose.

At the evening visit the temperature was 106°. Child wildly delirious. Facial expression very bad. Treatment: tub-baths now ordered, beginning with warm water, and gradually cooler, until the water was just as cold as it came from the faucet, which in March is pretty cold. The first bath lowered the temperature to 104°. The child enjoyed this and subsequent baths very much. The eruption became more and more marked, until the whole surface of the skin seemed to be raised above its usual level in one reddened, scarlet mass. The temperature rose again soon, and the parents had a hard night of it keeping the patient in bed. Chloral was given in five-grain doses up to fifteen grains. The subsequent baths through the night made no impression on the temperature. It would be 105° immediately after removal from the tub.

The temperature was always taken in the axilla, being, of course, much higher in the mouth or rectum.

Sixth Day.—At the morning visit the temperature was 105.5°. Lips parched. Eyes sunken. Child looked badly. The throat was clean, but red, swollen and angry-looking. The child in her delirium was constantly tossing around, and had to be held all the time.

Baths were continued. Phenacetine increased to six grains every three hours. Chloral used per rectum through the day, but when evening came I found the temperature 106°, and child looking like death. It seemed impossible for her to live until morning.

At this visit I rubbed twenty-five drops of guaiacol into the skin over the abdomen, and in two hours the temperature had dropped to 104°. In the night fifteen drops more were rubbed in, and at the morning visit on the

Seventh day, the temperature was 103.8°. Child had been delirious all night, but not quite so wild—a very slight improvement, which let in a small ray of hope. During the day fifteen drops of guaiacol were to be rubbed in. Phenacetine omitted. The tub-baths were continued. The evening temperature was 103.8°.

Eighth Day.—Patient not yet rational, but more tractable. Throat looking a great deal better.

Ninth Day.—The evening temperature was 101°; and the child had had a little refreshing sleep and looked a great deal brighter. Guaiacol now discontinued.

Tenth Day.—Temperature up to 103°, due undoubtedly to the discontinuing of the guaiacol; but the patient is really rational, and can talk reasonably for the first time. Scales appeared to-day.

From this time the temperature gradually fell, until on the fifteenth day it reached 99°.

The tonsils now became troublesome. First an abscess developed in the left tonsil, with the swelling externally. This was opened by an external incision on the twenty-sixth day of the disease. Then an abscess formed in the right tonsil, which was opened on the inside on the forty-third day. After this there was no further trouble; and my last visit was on the forty-seventh day, when scaling had ceased. Patient was out-of-doors in the eighth week.

I report this case to show that guaiacol may be of great use in the acute febrile diseases. It has been tried in typhoid fever, and found to be rather dangerous on account of depressing the temperature too far and causing collapse.

In this case there was a very high temperature; and it seemed to me that the delirium was wholly due to that, and as soon as the temperature began to yield the delirium began to subside.

The fact that the temperature rose immediately after stopping the guaiacol would seem to prove that it was really due to the drug, and not a coincidence.

Another interesting point was that the cold tub-baths had so little influence upon the temperature. These baths were enjoyed immensely by the little patient, who would quiet down and paddle in the water even when the delirium was at its height.

The three children in the family who were not affected were sent away, and did not return until the house had been fumigated; and up to the present time they have been perfectly healthy.

Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

(Concluded from No. 20, p. 495.)

CASE OF ANTIPYRINOMANIA.

CAPPELLETTI* reports the case of an hysterical girl of twenty-three, weak and nervous. Headache for two years, treated by antipyrin in small doses. Drug be-

* Rivista Sperimentale di frenatria, xlix, 100.

came necessary to her. The pain became incessant, and the drug lost its effect. The dose was increased to eight grammes a day. She grew worse; lost her appetite; had poor sleep; and the pain grew worse, with tinnitus. She became excited, irritable and anxious half an hour before the time for dose. Was agitated, walked about, sighed, etc., if not given it. Carried it in her pocket. Diarrhoea and convulsions ensued when attempt was made to stop it wholly. In the asylum the dose was cut down to two grammes, with sulphonal to relieve pain. She then had nausea, vomiting, anorexia, pallor, small pulse, and was much depressed. This lasted three days, and was not relieved by food and stimulants. She then became slightly excited, restless, loquacious and irritable. Given bromide of potash up to six grammes, and valerianate of quinine, but had bad symptoms set in whenever antipyrin was cut down, with weak pulse, mental depression and hallucinations, etc. Then inert powders were given, the antipyrin was wholly stopped, and caffeine and bromide of potash substituted; finally these were cut down; and she at last recovered. Slow and progressive diminution of symptoms. The symptoms from withdrawal were much like those from withdrawing morphine.

MENTAL CONFUSION.

Dr. Charpentier,¹⁰ under this title describes a mental state characterized by perturbation in the ideational sphere, consciousness, absence of delusion, and coexistence of inquietude. Often it cannot but be considered as an almost physiological state resultant on passage from slumber to wakefulness in all adynamic states or cerebral congestive conditions. It may appear at the onset of many psychoses as well as among chronic insanias and epileptics. In all cases, however, the concomitant psychic phenomena (hallucinations, amnesia, stupor, mutism) mark the picture of mental confusion. It may exist alone, and constitute by its duration, a true pathological state. It is a rapid, disordered progress of ideas before consciousness, preserved, but astonished and restless. The ideas are not erroneous but so varied and tumultuous in their course and so numerous that their numbers and disarray confounds the patient, who, incapable of directing his ideas although preserving his consciousness, falls into profound inquietude. Mental confusion has been styled obvolitation, torpor, hebetude, intellectual vertigo and ideational chorea. What renders the case difficult is the fact that the patient renders an exact account of it only when cured. Furthermore, they are apt to analyze the mental state they have experienced, and for the patient merely to describe this mental state does not suffice to reproduce it.

How can, therefore, mental confusion be determined in a patient who does not complain of it? Dr. Charpentier states that answers to simple *terae* questions (age, birthplace, colors) will indicate presence of attention but may appear incoherent because of rapid ideation. Usually the patients seem stupid. This is often the case with young female dyspeptics. Often mental confusion occurs in the morning after an insomnic night, a slumber too profound and prolonged or consecutive to excess. The patient appears lost; acts without will or without taking account of his acts. Mental confusion among the insane is found chiefly among the acute confusional lunatics or the convales-

cent; when it exists among these last they cannot be regarded as cured.

Diagnosis is only made after recovery. Mental confusion should be distinguished from temporal mental enfeeblement of intoxications or infections (in these last there is a parallel enfeeblement of consciousness or absence of inquietude); from stupor (mutism, loss of consciousness of surroundings) and from vertigo (loss of consciousness and from involuntary movements). Mental confusion of prolonged or frequently recurrent type has a bad prognosis. It occurs in parietic dementia, chronic persecutorial insanias and precocious dementia. It may be produced by suggestion, intimidation or surprise.

DIFFERENTIAL DIAGNOSIS BETWEEN LITIGIOUSNESS IN THE SANE AND INSANE.

Dr. Ludwig Horne,¹¹ after a careful review of the literature of the subject arrives at the following conclusions:

(1) An amnesia reveals nothing of importance in sane litigants; in the querulous paranoiacs a hereditary taint, peculiarities in childhood and after-life.

(2) The sane litigant shows no abnormal somnatic symptoms; in the paranoiacs, somatic symptoms are seldom absent.

(3) The motives in sane litigious people are pleasure in law suits, or the desire to obtain a final decision in a particular point of law; in the insane, the motive lies in an hereditary defect—an inability to submit to an unfavorable decision.

(4) Characteristics of litigiousness: (a) The sane litigant maps out his course of procedure; the paranoiac believes it impossible to lose his case, and does not plan beforehand. (b) The sane litigant will not go beyond a certain point, decided upon in the beginning; the paranoiac does not limit himself. (c) The sane litigant can end his trial at will; the paranoiac is drawn into new trials by his disease.

THE FUTURE OF ASYLUM SERVICE.

Under this head A. Campbell Clark,¹² Medical Superintendent of Glasgow District Asylum, Bothwell, Scotland, says:

"Where are the defects of the nursing staff and its work? A. The defects of our nursing staff are threefold: defects of (a) quantity, (b) quality, and (c) organization. B. The defects of nursing work are the natural results of the foregoing, but they are also due to (a) large wards, (b) lack of personal co-operation of superior officers, (c) the same monotonous grind from week to week. The present number of nurses for acute and curable cases is too small, the hours of duty are too long, and they are not officially attached to particular cases. The remedy is, a larger staff, give much longer leave, and you can have a larger per cent. of nurses on duty.

"As regards the question of quality, that we want more style and higher education is a delusion most disastrous for asylums. Placed in the balance against a bright, sunny temper and obliging disposition, mere education would be found wanting. Sunshine in our attendants is dependent upon sunshine in their surroundings. In a word, don't keep them so long in harness at a time, feed them well, groom them well, make them as healthy and happy as the nature of their work will allow.

¹¹ *Men. Med. Bloet*, No. 46, 1893.

¹² *American Journal of Insanity*, January, 1894.

¹⁰ *Rev. Internat. de Biblio. Med.*, January 25, 1893.

"Organization: In the first place, the night supervision and nursing of the insane is woefully insufficient. We cannot have short watches as on board ship, but with increased numerical strength, we can assign for night duty a larger staff with a supervisor or chief. Make night service longer and day service shorter, but break the night service in two parts, with one hour's suspension of duty between. In small asylums it would be the duty of the supervisor to relieve the subordinates in turn. In large asylums a relieving officer would be told off for duty. The leave of the day staff should be much more liberal than at present.

"The patients should be detailed in small groups for special written observations; each nurse should have a group. Nurses should exchange groups every three months, so that fresh interest is continually kept up, and the patients come under new influences. Change patients from one ward to another oftener than is done at present. Have medical officers and supervisors more in the wards collaborating with the nurses."

The writer recommends the formation of a mental nursery association, and a provident or pension scheme. If linked together under the patronage of asylum boards of management, they can only be followed by decided success.

GENERAL PARALYSIS AT PUBERTY.

Dr. J. Wigglesworth¹³ records two cases occurring in girls at twelve and fourteen years, proving fatal at sixteen and eighteen years, respectively. Both previously intelligent. Both said to have started from a fall; this, however, may have simply been an early symptom. Mental symptoms, those of slowly progressive dementia without grandiose ideas; soon gradual failure of mental power, followed by slow progressive paresis of limbs, until absolutely paralyzed and contractions developed; epileptiform convulsions noted in each. Necropsy showed thickening and opacity of arachnoid, with adhesions of pia mater to cortex (in one case decortication); enormous wasting of convolutions, great atrophy of cortex; whilst in one was an old, thick, organized, subdural membrane. Analysis of these cases and six others published showed the average age at which the disease commenced to be fourteen years, average duration four and one-half years. Five of the eight were girls, a reserve proportion to that shown in adult paralysis; mental symptoms showed preponderance of demented type of general paralysis; signs of puberty did not appear at all or were arrested and tended to disappear; menstruation in females, absent; and arrest of bodily development.

The most prominent probable factors in the production of the disease were heredity and congenital syphilis; traumatism being, perhaps, an additional cause in some cases.

"THE INCREASE OF INSANITY."

Under the head of "The Alleged Increase of Insanity," D. Hack Tuke¹⁴ presents a critical analysis of the statistics of insanity in Great Britain for the last twenty years. He gives the arguments and facts on the affirmative side, as presented by Mr. Corbet (in a forcible article in the *Fortnightly Review*) and others, and follows with his own reasons for denying the alleged increase in insanity. His principal points are thus summarized:

There has undoubtedly been since 1870 a large increase in the number of patients in asylums and workhouses, but proportionately more in the former than in the latter.

There has not been so great, but still a considerable rise, in the *admissions* of patients into asylums during the same periods, after deducting transfers and readmissions.

The advance in the number in detention, although it holds good after allowing for the increase in population, does not prove the increased liability of the community to insanity, seeing the vast accumulation due to a lower death-rate (even since 1870), the chronicity of the disease, and the lamentable tendency to relapse.

The advance in admissions again does not prove increased liability to insanity; as (a) the value and comfort of asylums are increasingly appreciated; (b) there has been a very large number of patients drafted from workhouses to asylums; and (c) there has been an ever-increasing encroachment on the mass of unregistered lunacy which the census shows to exist.

The increase in the number of the insane has taken place among the poorer classes of society.

The increase in the ratio of the insane during the twenty years between 1871 and 1891 has taken place in persons above the age of forty-five, the significance of which lies in the accumulation of chronic cases. On the other hand, there has been a decline during this period in the proportion of cases of mental weakness under twenty-five years of age to the population at the same term of life — a most important circumstance.

The age-distribution of the insane favors, therefore, the conclusion that the increase of insanity is apparent rather than real, being mainly due to accumulation.

That, considerable as has been the increase in the number of the insane, as returned in the censuses of 1871, 1881, 1891, the ratio of increase has been a declining one; for although the rise in the ratio to the population was 7.04 per cent. during the decade of 1871-81, it was only 3.23 per cent. in that of 1881-91.

If these results are, on the whole, reassuring, they are, it must be admitted, nothing to boast of because twenty years of social progress and the advance of medical knowledge ought to have materially lessened the proportion of the insane to the population.

The lesson to carry away from a study of the foregoing statistics is not one of congratulation, but the necessity for making more earnest and definite attempts to diminish the causes of insanity, and to discourage, by every possible means, the extension of the disease by the marriage of individuals of insane stock or who have themselves been deranged in mind, impracticable as I believe it to be to obtain this object by legislation.

F. B. Sanborn,¹⁵ in an article in the same journal, finds, on the other hand, that American insanity is greatly increasing, at least so far as the statistics of the insane in Massachusetts hospitals are an indication. Formerly it was held that the accumulation of the insane greatly in excess of the growth of the population was due partly to better care by which life had been prolonged; partly to better observation, bringing cases to light that were overlooked; finally, to stricter classification of diseases, allowing wider limits to insanity. All these agencies may be allowed up to a certain point; but we long since reached that point in Massachusetts, probably, too, in England and Scotland. Still we find this insane accumulation going on as fast

¹³ British Medical Journal, March, 1893.

¹⁴ Journal Mental Sciences, April, 1894.

¹⁵ Journal Medical Sciences, April, 1894, p. 214.

as fifty years ago, and in the face of influences that ought to yield just the contrary result. He believes that this can only be accounted for on the hypothesis that "occurring insanity" (new cases) is also increasing beyond the population ratio. Starting from the premise that the insane die faster than the sane, he shows that they should relatively diminish just as a feeble race relatively decreases among a sturdier race. Even if they did not recover often, the insane should decrease by virtue of a greater death-rate, unless a constantly increasing number of fresh cases neutralizes the effect of speedier death. But if both the surviving insane and their deaths increase in number steadily (as with us they do), must there not be an increasing source of supply, namely, new cases? In Massachusetts we have a reasonably exact registration of the insane, which shows the first admissions to *any hospital*, and also the number resident in all, the recoveries, deaths, and discharges without recovery. During the past fifteen years the population of the State increased from about 1,725,000 in 1879 to 2,500,000 in October, 1893. Thus, while the population only gained 45 per cent. in that time (or less), the strictly first admissions to *any hospital* — not merely the one making the return — increased from 849 to 1,617, or about 100 per cent.; and the deaths in all the hospitals and asylums of the State increased nearly 130 per cent. The resident insane in these establishments have increased about 94 per cent. or nearly doubled; while the unrecovered insane discharged or transferred each year have exceeded the recoveries and deaths put together, and fully account for the many recommitments in the whole period covered by the statistics [the figures are given in a table]. The presence in Massachusetts of the unrecovered insane that makes the steady accumulation of the chronic class possible and indeed inevitable, while the strictly first admissions (nearly 18,000 or 1,200 a year) have prevented the deaths and recoveries from checking in the least the rapid increase of cases new or old.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, March 12, 1894, the President, DR. C. F. FOLSOM, in the chair.

DR. W. F. WHITNEY read a paper on

CIRCROID MYXO-NEUROMA OF THE TONGUE, ILLUSTRATED BY LANTERN SLIDES.

DR. C. W. TOWNSEND read a paper on

MILD FORMS OF NASAL DIPHTHERIA.¹

DR. A. L. MASON: It seems to me that there are two classes of cases which especially interest us in this connection. The first comprises those with membrane in the throat and all the aspects of diphtheria, but in which the specific bacillus of that disease is not found. It is the part of prudence to treat such cases as if they were diphtheria. To the second class belong the mild cases to which Dr. Townsend refers; and the question arises whether from the discovery of the Klebs-Löffler bacillus, in the absence of all visible signs of diphtheria, we must regard and treat such cases always as diph-

theria. Within a fortnight in the general wards at the City Hospital have occurred three cases of that kind in patients convalescing from other diseases, one typhoid, another rheumatic fever and a third pneumonia. They developed sore-throats of the mildest type with reddening of the pharynx and fauces but no membrane, no discharge from the nose. In all three cases the Klebs-Löffler bacillus was found, no appearance whatever otherwise indicating diphtheria. Should we feel obliged in the present state of knowledge to class such cases as diphtheria, and have them isolated at once and treated in the diphtheria wards? I think that we must do so. Whether there is another bacillus morphologically identical in appearance with the Klebs-Löffler bacillus I believe is still an open question. These three cases were transferred, I must say with considerable compunction on my part, to the diphtheria ward, where they were isolated so far as possible. They developed no other symptoms and got well in a few days. If the bacteriological test is decisive we can never feel safe in the treatment of cases of pharyngitis or sore-throat of any kind without it. The temperature in these cases was but slightly raised.

DR. J. H. MCCOLLOM: I have been very much interested in Dr. Townsend's paper, and I think the point he makes of mild cases of the disease is very important, for there can be no doubt that these mild cases are the cause of the prevalence of diphtheria in this community. The various cultures from the Children's Hospital were interesting from the fact that in a large number of cases guinea-pigs were inoculated, and in the majority of instances the pigs died in from twenty-four to forty-eight hours, showing clearly that we were dealing with a virulent form of the Klebs-Löffler bacillus. So far as a bacillus morphologically similar to the Klebs-Löffler found in the mouths of healthy individuals is concerned — the pseudo-diphtheritic bacillus, as it is termed — I am inclined to think that too much stress is laid upon the existence of this organism; for after examining the cultures from 250 throats, I have not found this bacillus. I have in mind the case of a patient who was ill with undoubted diphtheria. The membrane disappeared after four weeks, but a nasal discharge continued from which a culture was made which was found to contain the Klebs-Löffler bacillus. From this a pure culture was made and a guinea-pig inoculated; and the pig died with every indication of death from diphtheria. One week later a second culture was made, and no Klebs-Löffler found. This case had lasted for six or eight weeks, and all this time the individual might have been a source of danger to the community. Fortunately, however, the person was isolated; but in certain localities he would have gone about and spread the disease. Only by means of a bacteriological investigation could the date of his recovery be established. Another case in point is that of what was supposed to be, by the physician in attendance, a case of follicular tonsillitis; but a culture from the throat revealed the presence of the Klebs-Löffler bacillus, the virulence of which was demonstrated by its effect upon a guinea-pig. The patient was isolated, which would not have been the case if a bacteriological examination had not been made. It seems to me that the attempt to throw discredit on bacteriological examinations of the throat by the theory that there is a bacillus morphologically similar to the Klebs-Löffler bacillus found in the throats of healthy individuals, is calculated to do much harm.

¹ See page 513 of the Journal.

In two or three of the cases to which allusion has been made by Dr. Townsend it is to be regretted that so few cultures were made, for it seems to me that two negative cultures made from the throat of a patient who has been ill of diphtheria are not sufficient to prove that he has entirely recovered from the disease, and that he is no longer a source of danger to the community. I think there should be at least four negative cultures made at intervals of two or three days, before we are justified in saying that the individual is no longer a source of danger of contagion. While by this means a patient may be isolated longer than seems to be absolutely necessary, yet it is only by these long periods of isolation that we can ever hope to accomplish anything in stamping out diphtheria.

It has been said that sometimes, even in a marked case of diphtheria, the Klebs-Löffler bacillus is not found; but if the culture is carefully made, and particularly if the precaution is taken to pass the needle through the membrane or under it, the chances of a failure to obtain a culture of the bacillus are so slight as to be worthy of very little consideration. Another point to which Dr. Townsend alluded is that of early diagnosis. There have been several instances in which cultures made from the throats of persons exposed to diphtheria have been found to contain the Klebs-Löffler bacillus before the appearance of any local or general symptoms. The importance of this early diagnosis, so far as treatment is concerned, is manifest.

DR. H. C. ERNST: I do not know that I have anything to add. The work Dr. McCollom has carried on I have watched with great interest. I think some extremely important results are to be obtained from it when completed. The results thus far seem to show that about ten per cent. of the cases submitted to the laboratory for examination are true diphtheria. As to obscuring the diagnosis by the so-called pseudo-diphtheritic bacillus, I am inclined to believe that its occurrence is not sufficiently frequent in clinical work to produce any confusion. I have been very much interested in hearing the cases by Dr. Townsend, and I think this is a question that comes home to all practitioners of medicine. I am very glad to see it brought up.

DR. W. T. COUNCILMAN: I had an opportunity on Saturday of examining anatomically one of the cases of nasal diphtheria. My attention was especially attracted to the nose by the presence of small excoriations on the surface of the skin around the nose, which were covered with a dirty grayish membrane presenting very much the appearance of a diphtheritic membrane. The edges of the nostril were slightly excoriated and had the same membrane on them. In the nasal passages on the mucous membrane there was exactly the same diphtheritic membrane which we find in the pharynx. In the pharynx there was no extensive formation of membrane, although on the tonsils here and there and on the posterior pharyngeal wall there were some very small patches of membrane, but the most of the membrane was on the roof of the pharynx and extending from there into the nasal cavities and especially on each side of the vomer, and it had also extended far up into the upper turbinate bones. The diphtheria bacilli were found in cultures made from the excoriations around the nostrils and also in the membrane of the nose.

DR. M. PRINCE: I should like briefly to mention an epidemic of diphtheria which occurred some years

ago in some of the homes for children in this city, and which I had an opportunity of investigating. If I remember rightly there were 50 to 60 cases of diphtheria. These cases were divided up by the doctor in charge of the homes into three classes, and each class was in a room by itself. In one room all those that showed no membrane in the throat and that showed simply symptoms of coryza; and in another room all those with membrane, but mild cases; and in the third room the malignant cases. In these days we had no test, of course, as this one of determining whether they were diphtheria; but there was one piece of evidence which showed that these nasal cases were diphtheria, that is, every day some of those children with the nasal discharges came down with membranes in the throat and would be transferred to the room of children with membranes. That experience impressed me then with the frequency of the nasal form, and how difficult it was to distinguish the mild cases. I have been impressed with the numbers of these mild cases that exist in tenement-houses. I would also mention an epidemic of diphtheria started in Nantucket by a case of diphtheria in a physician who was supposed to be well and went to Nantucket and gave rise to an epidemic.

DR. E. M. BUCKINGHAM: In connection with the case of mine that Dr. McCollom reported, I should like to add that while coryza lasted many weeks, yet within a short time of the disappearance of the bacilli there was marked diminution, and the boy soon got well. With reference to nasal diphtherias I should say there are a number of nasal diphtherias that are not very sick, just as there are a number of tonsillar diphtherias not very sick, but I should mark the distinction between those that are sick, and those not very sick, not so much on the line between primary and secondary as upon the line between anterior and posterior nasal diphtheria.² I think that any of these cases may at any moment become dangerously ill. The temperature of diphtheria in my experience is pretty generally not very high unless the case is septic.

DR. GEO. B. SHATTUCK: It seems to me if the diagnosis of diphtheria is to be settled by the presence of the Klebs-Löffler bacillus without reference to other symptoms at all, and people having this bacillus in the naso-pharynx are to be isolated and treated as if they had diphtheria, it brings up a pretty wide question with reference to the manner of dealing with all those who come in contact with such people. If the mere fact that a person carries the Klebs-Löffler bacilli about the person internally or externally necessitates isolation, we shall hardly know where to stop in our measures directed to this end. It seems to me there is a possibility of going too fast and too far with reference to this bacillus as well as with reference to the bacillus of tuberculosis.

DR. TOWNSEND: A weak solution of peroxide of hydrogen was used in all the cases.

There was one thing I intended to speak of, and that was a method by which infection takes place. It seems to me it might arise from the common habit among children of picking the nose. If there were any Klebs-Löffler bacilli lying about the wards, the child in picking its nose might inoculate the mucous membrane. I

² On the morning after the meeting, I counted twelve children in the City Hospital all playing together with great spirit. All had coryza with Klebs-Löffler bacilli in the nose; and in all these cases coryza, which was the only evidence of disease remaining, was secondary to severe disease in the posterior nares and throat, all trace of which had disappeared. — E. M. B.

think on that account primary nasal diphtheria must be much more common than is supposed.

Dr. McCollom spoke of passing the needle through the membrane in order to get at the Klebs-Löffler bacilli. That brings up the question of using the swab or needle. It seems to me as if the swab would collect more and stand a better chance of finding the bacilli. But if the bacilli are at the bottom of the membrane, how can you get them on the swab?

DR. C. F. WITHINGTON reported

A CASE OF AMŒBIC DYSENTERY.*

DR. W. T. COUNCILMAN: The amœbæ found in this case were very numerous and active. They were first seen on examination of the fæces by my assistant at the City Hospital, Dr. Emerson, who had had no previous experience in looking for them. They appeared to me to be larger than usual, the size varying a great deal. As a rule, they are eight or ten times the diameter of a red corpuscle. We can always recognize in them a very granular interior, which is surrounded by a homogeneous portion. The granular interior is called *endosarc* and the homogenous external portion *ectosarc*. In the endosarc there are always large vacuoles filled with fluid, but I have never found anything analogous to the contractile vesicle of the ordinary fresh water amœba. The movement in some cases is quite active, appearing first as a protrusion of the ectosarc, which is followed by the flowing of the endosarc into the protrusion. The movement sometimes is progressive, and the organism will, in a few moments, move across the field of the microscope.

The amœbæ always contain various foreign substances, and it is very common to find red corpuscles within them. In addition to the red corpuscles, epithelial cells (or fragments of these) are frequently found; but it is rare that leucocytes are enclosed in them. The nucleus cannot be seen in unstained specimens, and it is made evident by a few staining reagents. The dysentery which is produced by the amœbæ is always of a perfectly definite type, and can be distinguished anatomically from any of the other forms.

Anatomically, dysentery can be divided into three varieties; amœbic, diphtheritic, and simple or catarrhal. The latter, probably, represented etiologically different forms not included under the amœbæ and diphtheritic. As far as I have been able to learn from observation and from literature, the great epidemics of dysentery seem to have been always of the diphtheritic form. In this there is necrosis of the mucous membrane extending more or less deeply, combined with fibrinous exudation. It may or may not be combined with ulceration. Ulceration is due to the casting off of the necrotic tissue and fibrin. The ulcers are irregular in form and may be superficial or may extend down into the muscular coat. In the simple and catarrhal dysentery there are two more or less distinct forms. In the first the follicles of the intestines are chiefly affected. These become enlarged, and suppuration may take place within them. They may rupture on the surface, giving rise to small ulcers which extend some distance into the mucous membrane. The most common form, and which is frequently combined with this affection of the follicles, is purulent catarrh of the mucous membrane, combined with more or less erosion of the surface. The ulcers are superficial, in many cases do not extend through the mucous membrane.

They are always much broader on the surface than on the bottom.

In the amœbic dysentery we have a type which is anatomically distinct, and may be distinguished at once from either the simple or diphtheritic form. In this type the stress of the disease does not appear to fall on the mucous membrane, but it affects the submucosa, the mucous membrane being involved secondarily. Neither the glands of the intestines or the follicles appear to take any part in the process. A great swelling of the intestines is the most marked feature of the disease. This is due to the infiltration of the submucosa. The swelling not only affects the intestine everywhere, but here and there there are nodular projections. The ulcers begin in the interior of the nodules by the submucous infiltration breaking through to the mucous surface. The ulcers always have deep undermined edges and sometimes long sinuous tracts, communicating with adjacent ulcers here found in the submucosa. Sloughs of the mucous membrane are frequently found in this form of dysentery, and the pathological conditions produced are extremely interesting. There is not so much distinct suppuration of the tissues as simple softening with following ulceration. The main feature appears to be softening of the intercellular connective tissue.

This case was not accompanied by abscess of the liver. The specimens which I show here have been preserved in alcohol, and they do not show the typical lesion as well as they ought when fresh.

Recent Literature.

A Practical Treatise on Diseases of the Hair and Scalp. By GEORGE THOMAS JACKSON, M.D. New, revised and enlarged edition. New York: E. B. Treat. 1894.

Dr. Jackson's book on diseases of the hair and scalp has reached its second edition. We find the book considerably enlarged and amended, and the little that has been added to our knowledge of this subject during the last five years, receives due notice. New illustrations have been added and the valuable bibliography at the end of the book has been brought down to January, 1893. It more than retains its place as a clear exposition of what is known of diseases of the hair and scalp.

A Hand-Book of Ophthalmic Sciences and Practice. By HENRY E. JULES, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital. Pp. 549, with illustrations. 2d edition. Philadelphia: Lea Brothers & Co. 1893.

This is a second edition of a work previously reviewed in this column, and is reproduced with some additions and alterations. The colored plates, especially those relative to external diseases of the eye are new, but are not a great improvement over those in the first edition, which were far from good. The text is clearly printed, and headings and sub-headings printed in bold type and italic in a manner that makes the book exceedingly convenient for ready reference. The style of the book is interesting, and it is admirably adapted to the purpose for which it was evidently intended, a reference hand-book in a physician's library.

* See page 516 of the Journal.

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HAFFKINE'S METHOD OF INOCULATION
AGAINST CHOLERA.¹

THE preventive inoculation against cholera which Professor Haffkine is putting to so thorough a test in India, has already given sufficient evidence of its being of some value, to make an account of the methods employed of interest.

Two preparations are made of the "vaccine" as the virus or antitoxine is for some curious reason called—one an attenuated form, obtained by successive cultures in nutritive media, and a strong virus obtained by a culture on a solid medium, as agar-agar, after several generations have been passed through guinea-pigs. The vaccines of normal strength are diluted for injection with sterile water, and the emulsion carefully examined.

The skin of the patient is made aseptic over the seat of injection, which is about an inch and a half above the crest of the ilium and three inches posterior to the anterior superior spine. The first injection, which is occasionally the only one required, is always made with the weaker preparation. For the first two hours no effect is noticed, but from the third to the twelfth hour there is a rise of temperature, a feeling of malaise and more or less tenderness over the point of inoculation. During the next twenty-four hours the general symptoms disappear, the painful induration lasting for a few days.

Beyond a temporary reddening at the point of inoculation no alteration of the surface of the skin is produced. No disturbance of the digestive functions is, as a rule, produced, and no change in diet or occupation is necessary. In a few persons there is at first chilliness and a slight diarrhoea.

The amount of fever varies, and is taken as an indication of the natural amount of resistance of the patient against cholera, high fever being considered as a proof of strong natural resistance. In this case the second inoculation is sometimes adjudged unnecessary, or is made with a small dose of the strong virus. On

¹ Indian Medical Gazette, April, 1894.

the other hand, when the fever produced by the first inoculation is not perceptible, this is taken as a proof of susceptibility to the disease, and a second inoculation is given with an increased dose, five or more days after the first, on the opposite side of the body, the stronger virus being used. The symptoms ensuing are essentially the same as those caused by the first dose, varying only as the dose is larger or smaller. In the cases where the first dose is followed by a fall of temperature, diarrhoea or other mild choleraic symptoms, the second injection is always given with an increased dose, but notwithstanding such larger dose the choleraic symptoms are produced exclusively by the first inoculation, fever being the only symptom after the second inoculation.

RAILWAY SPINES AND SURGEONS.

THE seventh annual convention of the National Association of Railway Surgeons, held two weeks ago in Galveston, Tex., was a most entertaining gathering. The meeting was held in Harmony Hall, which was about all the harmony there was.

Nevertheless, Mr. Clark Bell, of New York, chose as the subject of his address "Railway Spine," which he characterized as the Nemesis of the modern railway. Like all proper Nemeses, it had an origin and an aim. As a means of procuring enormous verdicts from railway corporations in accident cases, it has baffled both railway surgeons and counsel, and, vampire-like, sucked more of the blood of corporate bodies and railway companies than all other cases combined. This vampire-like Nemesis has also the property of the philosopher's stone, of turning injuries to golden opportunities for wealth. For the better accomplishment of its purpose, this Nemesis first showed itself as a plant sprouted on English soil after the era of steam, but rapidly growing in its infancy to a tree like a banyan, so that it has been "an incubus, and almost a parasite, upon the modern railway." "Avarice and greed have been the rain and dew which have watered" this Nemesis morn and eve.

He most properly considers that "the time has come when the profession of surgery should define this injury so that courts, counsel and juries may know and locate and apply to it those tests which are insisted upon in regard to all other physical injuries. It should be brought out of the shadow into the sun, out of the darkness into the light, out of the mysterious into the actual—the real." The legal profession is particularly averse to a Nemesis; and consequently both bench and bar are desirous of having an organization (such as that of railway surgeons) "frame a correct definition of the disease, if it exists, and to so describe and characterize it with precision that not only judges and lawyers may know what it is with certainty, but that the average jurymen shall be able to do so."

One of the great duties of the near future for railway

surgeons is to establish definitions, rules and limitations of special injuries, real and imaginary, and so effectually put a stop to the enormous verdicts which are sapping the reddest life-blood of the Nemesis-ridden modern railway.

The afternoon session, which was devoted to the election of officers, had a Nemesis (or something else) to trouble it, for it was a most exciting and spontaneous session, especially spontaneous in the calling of names and the exchange of complimentary criminations. Finally, the new officers were elected, with a general belief that the ballot-box was really never stuffed, and that nobody had really falsified or borne ill-will.

The morning session the next day began at 9 A. M. with divine invocation; but before then the spines of the railway surgeons had recovered their normal steadiness and control, and they all had a hop—that is, the surgeons and their families, not the spines nor the Nemesis. The women were fair, the men were brave. Our Texan authority informs us that “Hundreds of couples danced to the time of rhythmic strains in the parlors of the Beach Hotel. The occasion was *recherche*. It was perfect.”

COMPULSORY VACCINATION.

A DECISION of public interest was rendered by Justice Wm. J. Gaynor, in the Supreme Court of Brooklyn, on May 18th. Since the outbreak of small-pox in that city about three months ago special vaccinators, under the direction of Health Commissioner Emery, have vaccinated over one hundred thousand persons, and in many instances it was against the protest of the individual. The question of compulsory vaccination was not brought before the courts, however, until two expressmen were forcibly quarantined in a stable for refusing to be vaccinated. These men secured a writ of habeas corpus, and it was upon this that the decision of Justice Gaynor was handed down.

In the course of it, he says: “To justify this action the commissioner makes written return to the writ that, as the petitioners are expressmen, and therefore go about and carry goods, they are, in his judgment, ‘unusually exposed’ to small-pox contagion. Therefore he ordered them to be vaccinated, and they refusing to submit their bodies to vaccination, he ordered quarantine to be placed upon said premises and that said persons be detained therein until they consent to be vaccinated. If the commissioner had the power to imprison an individual for refusing to submit to vaccination, I see no reason why he could not also imprison one for refusing to take some dose. But the legislature conferred no such power upon him, if indeed it has the authority to do so. The law empowers all health boards to require the isolation of all persons and things infected with or exposed to contagious or infectious diseases. There is no claim that the petitioners are infected or have been actually exposed to infection. Even if they were subjects for isolation by

reason of infection or exposure thereto, they could only be detained while such conditions existed, and not indefinitely until they yielded their bodies to vaccination. . . . If the legislature desired to make vaccination compulsory it would have so enacted. If, however, it should be made by the legislature a criminal offence to refuse to be vaccinated, it may well be suggested that the accused under such a law would have to be tried, like all other offenders, in a competent court and after the due process of law which is guaranteed every one by the constitution.”

The petitioners were discharged.

MEDICAL NOTES.

THE HOSPITAL SUPPLY OF NEW YORK.—New York City has eighty-one hospitals, containing ten thousand eight hundred and seven beds, of which eighty-five hundred are free.

EDITOR OF THE ARCHIVES OF PEDIATRICS.—Dillon Brown, M.D., Adjunct Professor of Pediatrics at the New York Polyclinic, will take the editorial charge of the *Archives of Pediatrics*, beginning with the July issue.

A SUMMER SCHOOL OF NEUROLOGY AND PSYCHIATRY.—A summer course of clinical and laboratory study of nervous and mental diseases is to be given for six weeks, beginning June 4th, at the Illinois Eastern Hospital for the Insane.

PROLONGED LIFE AFTER PERFORATION OF THE HEART.—A man was shot in the chest recently in Erie, Pa., and lived for seventy hours afterwards. A post-mortem examination of the body showed that the bullet had passed through the left ventricle.

THE CZAR'S INTEREST IN THE NEXT INTERNATIONAL MEDICAL CONGRESS.—The Czar of Russia, who has from the first shown great interest in having the next International Medical Congress meet in Russia, has signified his intention of contributing fifty thousand roubles towards the expenses of the meeting.

THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.—At the last meeting of the American Medico-Psychological Association, held in Philadelphia May 17th, the following officers were elected: President, Dr. Edward Cowles; Vice-President, Dr. Richard Dewey; Secretary and Treasurer, Dr. Henry M. Hurd; Auditor, Dr. A. R. Moulton.

STATE BOARD OF MEDICAL EXAMINERS OF NEW JERSEY.—The last meeting of the State Board of Medical Examiners of New Jersey to examine candidates desiring to practise medicine in that State under the present law, will be held June 14th at the capitol at Trenton. The new law, which goes into effect July 4, 1894, requires all candidates to have a competent common-school education, to be graduates in medicine, and to have studied at least four years and to have taken three full courses of lectures before being admitted to an examination.

THE LYNCHING RECORD. — During the year 1893 there were two hundred persons put to violent death by lynching in the United States, an increase of one over the year 1892. Of this number, thirty were white persons and one hundred and fifty negroes (four of them women). Fifty-four were killed for rape; fifty-seven for murder; the rest for various smaller crimes. During the last twelve years nearly two thousand negroes have been shot, hanged, or burned to death by mobs.

THE NEW JERSEY STATE HOSPITALS FOR THE INSANE. — This is the present position as to the State Hospitals for the Insane in New Jersey, and there is great desire on the part of medical men to have the Governor rightly interpret the law in the appointment of new officials: "An act has been passed, and is now in the hands of the Governor, which makes vacant every position in connection with the State Hospitals for the Insane; and as it provides for a non-partisan Board of Managers, and as this is in accordance with a suggestion made by the Governor in his annual message, it is fair to presume it will become a law."

MEAT-EATING, VEGETARIANISM AND MANNERS. — A good deal has been said recently about the bad temper caused by meat-eating and by implication of the mild gentleness of those who subsist on roots and herbs. The *National Popular Review* is moved to champion the flesh-devouring man and says: The Hindoo professional assassin or murderer is probably as cold-blooded and as ferocious a being as one may imagine. The Chinese are great vegetarians. Rice, beans in the green state, cabbage and large spinach, water-cresses and fruits enter largely into their diet. They are besides very fond of fish, and yet there is nothing more bloodthirsty and bellicose, more wild or more unmanageable than the Chinaman when aroused. On the other hand, the native Californians, like the dweller on the wild pampas of South America, who lived on an exclusive beef diet, were generous, self-composed, and not in the least given to either strife or blood-shed.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, May 23, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 17, measles 23, typhoid fever 23, small-pox 0. There is one patient with small-pox at the Canterbury Street Hospital, two at Gallop's Island; patients nearly well; no deaths.

REQUESTS TO HOSPITALS. — The will of the late Nancy Bartlett, of Milford, Mass., bequeaths five hundred dollars each to the Perkins Institution for the Blind and the Children's Hospital of Boston.

A FILTER PLANT FOR THE PROVIDENCE WATER-SUPPLY. — The city government of Providence, R. I., has taken the preliminary steps towards the construction of a large and complete filtration plant for its public water-works.

BOVINE TUBERCULOSIS IN JAMAICA PLAIN, MASS. — Several valuable blooded cows belonging to private herds in Jamaica Plain have been found seriously affected with tuberculosis, and have been killed.

A HOSPITAL FOR CONTAGIOUS DISEASES IN SOMERVILLE, MASS. — The city of Somerville has fitted up a small building on North Street for patients with contagious diseases. It is a one-story building, containing four rooms.

THE BOSTON CITY HOSPITAL EXAMINATION FOR HOUSE-OFFICERS. — There were thirty-nine candidates for appointment as house-officers at the Boston City Hospital at the examination last week. There were nine vacancies to be filled.

AN EMERGENCY HOSPITAL FOR EVERETT, MASS. — A meeting was held in Everett last week to consider the establishment of an emergency hospital. The proposed articles of incorporation were referred for final acceptance to a later meeting.

MASSACHUSETTS MEDICAL SOCIETY. — The annual meeting of the Massachusetts Medical Society will be held on June 12 and 13, 1894. Attention is called to the fact that the Meetings of the Sections at 2 P. M., and the Shattuck Lecture at 8 P. M., on Tuesday the 12th of June, will be at the Harvard Medical School. The Meeting, the Annual Discourse and the Dinner, on Wednesday, June 13th, will be in Mechanic Building.

A SMALL-POX HOSPITAL FOR CHELSEA, MASS. — The occurrence of a case of small-pox in Chelsea has led the Board of Health of that city to purchase for a small-pox hospital a building on Bellingham Street, which has been occupied for some time as a tenement-house. It contains thirteen rooms, and is well adapted for its purpose, having formerly served as a small-pox hospital before being used as a dwelling-house. It is about five hundred feet from any other houses.

BARNSTABLE DISTRICT MEDICAL SOCIETY. — The annual meeting of the Barnstable District Medical Society was held at Hyannis, April 18th, and the following officers were elected for the coming year: President, Horatio S. Kelley, Jr., of West Dennis; Vice-President, Edward E. Hawes of Hyannis; Secretary, F. W. Pierce of Marston's Mills; Treasurer, George N. Munsell of Harwich. At the close of the meeting the Society was entertained at dinner by Dr. G. W. Doane.

A DINNER TO DR. E. H. BRADFORD. — A dinner was given to Dr. E. H. Bradford, at the Union Club, on Tuesday evening, May 22d, by his former colleagues and associates of the Boston City Hospital, to mark their sense of the loss which the hospital and they themselves have sustained by his resignation from the hospital staff, of which he has been a most valued member for fourteen years. The President and Secretary of the Board of Trustees, the Superintendent, several members of the Consulting Board,

and almost all the members of the active staff, were present. Dr. D. W. Cheever, the President of the hospital staff, presided very felicitously; and many informal speeches testified to the flattering appreciation in which the guest of the evening is held by his former colleagues. Dr. Bradford was presented with a cup bearing a suitable inscription.

NEW YORK.

STERILIZED MILK FOR THE POOR.—Mr. Nathan Strauss, who has long been identified with philanthropical work in the city, has opened four depots in the tenement-house districts for the sale of sterilized milk for the benefit of the poor. His aim is to diminish the death-rate among children in summer, and the sterilized milk will be sold at a lower-rate than ordinary milk can be procured elsewhere. In addition, powdered barley and oat-meal for the purpose of preparing food for infants will be sold at the lowest possible prices. Last summer Mr. Strauss maintained but a single depot of this kind, and the result seemed to be very satisfactory.

TUBERCULOUS MEAT.—The investigation of the case recently reported in which the four quarters of a tuberculous cow were seized at West Washington Market showed that a number of other cows in the herd at Goshen, Orange County, from which the animal came are affected with tuberculosis. During the year 1893 the quantity of meat condemned in the city of New York amounted to 1,175,287 pounds, against 2,862,144 pounds in 1892, when the quantity was about 90,000 greater than in 1891. For the three years the average was nearly three tons a day. In addition to the various markets, the meat inspectors visit daily all the slaughter-houses in the city. They not only see the killing done, but insist that the places are kept clean, the refuse promptly removed, and every thing done to make the slaughter-houses as free from anything objectionable from a sanitary standpoint as is possible. No one is permitted to slaughter cows except between the hours of 8 A. M. and 5 P. M., in the presence of an inspector. If a cow is found to be affected with tuberculosis the carcass is promptly condemned and sent to the offal dock. Then the case is followed back, if possible, to the farm from which the animal came and all necessary precautions are taken to prevent any more cattle being brought from the place, while the officials of the State Board of Health are notified of the condition of affairs.

THE NEW YORK STATE COLONY FOR EPILEPTICS.—In a recent issue there was a brief notice of the act of the New York Legislature establishing a colony for epileptics in that State. The very great value of such an establishment, and the important advance it marks in State care of these unfortunate persons, makes a more extended notice of interest. A Board of Five Managers is provided for, to serve without salary and to meet at the colony at least once a month. The Governor appointed as the Board of Managers: Dr. Frederick Peterson, of New York;

Mrs. C. F. Wadsworth, of Genesee; George M. Shull, of Mount Morris; Dr. Charles E. Jones, of Albany, and W. H. Cuddeback, of Buffalo. At its organization in Albany on the 3d of May, the Board made Dr. Frederick Peterson, President, and George M. Shull, Secretary. The law requires that all of the buildings put up shall be on the village plan; and an important provision in this bill is that the Managers may accept any bequests of persons interested in the welfare of epileptics, and it is believed that many charitable wealthy people will build cottages upon the splendid sites on the tract, to bear their names and exist as lasting memorials to their desire to serve humanity in this wise. A medical superintendent, steward, matron, pathologist, nurses, school-teachers, teachers of various industries and arts, and so on, are to be appointed as needed; but the colony will not be ready probably to receive patients before the autumn of 1895. It is thought that the colony will ultimately number fifteen hundred to two thousand members. As soon as possible the six hundred epileptics in the various county almshouses will be taken in charge. Later, private patients will be received at prices corresponding to the accommodations asked for. It is sure to become self-supporting in the course of time, and to grow into an industrial and agricultural village that will more than rival the similar and famous colony at Bielefeld, Germany, upon which to a certain extent this is modelled.

Miscellany.

THE OVER-ZEALOUS THERAPEUTICIAN.

IN his address before the International Medical Congress, Professor Stokvis, speaking of the vagaries of modern pharmacy and chemo-therapeutics, said:

"The reason of the present situation—or imbroglia—is obvious. By the side of the chemist stands the busy practitioner, or the overwrought professor. Both are oppressed by the sense of insufficiency of their art; neither has the time to observe, reason and conclude. It is the professor who publishes with railroad haste his observations and impressions, for he is ever haunted by the fear lest another should precede him in the new discovery. He it is who makes others follow, sheep-like, in the wake. He constitutes himself a bustling *impresario*, always on the lookout for a new sensation, agitating himself and the public, and, finding that he has before him a fickle, unquiet, impatient audience, he hastens to deal with new subjects, if not every day, at least every week. During the year 1893, sixty-eight new chemical products have been recommended to me, this figure not being inclusive of entirely new drugs or their active principles. In each case we are told that the new product is of the very first importance, of exceptional therapeutic value, and perfectly harmless. *Fistula dulces canit volucres dum decipit aucups.* The wise man will not be taken in. He will be guided by therapeutic teaching such as that of the immortal Baglivi, the author of the pregnant phrase, '*Ars tota in observatione*,' or by the teaching of my honored friend, Professor Semmola, delivered with all

¹ Lancet, April 21, 1894.

his *maestria Italianni* from his chair in the University of Naples, a university which has lately set a glorious example to Europe by proclaiming that a drug that is efficacious cannot be harmless. Nearly all new remedies have their period of success, be it but for an hour, and this is due to 'suggestions,' either by medical men or patients: but, with few exceptions, these panaceas are doomed to be laid aside as forgotten and antique curiosities."

CHARLES C. PIKE, M.D.

RESOLUTIONS OF THE ESSEX SOUTH DISTRICT MEDICAL SOCIETY.

Whereas, Dr. Charles C. Pike, an honored and beloved member of the Essex South District Medical Society has, in the infinite wisdom of God, been called from among us in the prime of his manhood; therefore, be it

Resolved, That in his death we recognize the great loss to this Society, to the community in which he lived, as well as a personal bereavement to those of us who knew and loved him so well; and we desire to pay to his memory a tribute of sincere respect, expressing our admiration of his attainments as a physician and of his manliness and purity of character.

Resolved, That we extend to his wife and family our heartfelt sympathy at the great grief which has come upon them.

Resolved, That a copy of the above be presented to the family of the deceased, and also be entered on the records of the Society.

(Signed)

C. A. CARLTON,
CHARLES W. HADDOCK, } Committee.
FRANK L. ATWOOD,

Correspondence.

"THE MEDICAL REGISTRATION BILL IN THE MASSACHUSETTS LEGISLATURE."

BOSTON, May 19, 1894.

MR. EDITOR:—The worst of this bill is that it will benefit only the quacks; that is to say, if any of them will cram so as to be registered, which may be doubted, generally. Every M.M.S.S. is registered on or before he becomes a member (in fact, even though no word is said about it at the time). Formerly, the candidate, after being licensed, had to wait three years and then ask to become a member. Now, he does not wait a moment, but is licensed and admitted at the same moment, on his passing the examination successfully. The Society does all this for him, and nobody can take this right or power from the Society without its consent, and no one can prevent its members from practising medicine and surgery while residing in Massachusetts. The bill can give no further right to you or to me than we now have, even if we ask its agents to register us, which I trust we shall not do.

The bill should be entitled "An act to encourage the practise of quackery by dignifying persons illegally using the designation 'M.D.'!" It will only degrade the regular profession in as far as any of its members permit their names to be registered with these quacks; and, as for the public, it will be worse off than ever in endeavoring to distinguish by title the reputable from disreputable practitioners of medicine.


Strange that such a bill should be allowed to pass with so little opposition; the *Boston Advertiser*, only, has indicated some of its many "defects."

The intimation that the medical member of the Senate is the author of the bill is an absurdity not to be encouraged.

Very truly yours, *

METEOROLOGICAL RECORD.

For the week ending May 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermo- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. e		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S.. 6	29.82	60	72	48	97	90	94	S.E.	S.W.	10	17	R.	F.	0.44
M.. 7	29.70	63	79	58	87	59	73	S.W.	S.W.	18	11	O.	C.	
T.. 8	29.80	68	78	59	53	33	43	S.W.	S.W.	3	9	O.	C.	
W. 9	30.00	64	73	54	45	49	47	N.W.	E.	16	5	C.	F.	
T.. 10	30.37	54	59	50	45	64	54	N.E.	S.E.	13	14	C.	C.	
F.. 11	30.38	55	66	44	60	78	69	S.E.	S.W.	9	6	F.	F.	
S.. 12	30.32	60	70	49	55	82	82	N.W.	S.W.	8	11	C.	C.	
	30.05		71	63			62							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat; S., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 12, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.	
New York	1,891,306	790	311	18.33	17.81	1.56	9.23	1.82	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	399	124	10.75	15.00	.75	5.25	—	
Brooklyn	978,394	366	153	16.20	16.20	1.08	6.75	1.08	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	179	80	13.44	16.80	.56	10.64	1.12	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	98	38	12.24	13.26	2.04	5.10	1.02	
Cincinnati	305,000	83	25	7.98	8.12	1.14	3.42	—	
Cleveland	290,000	101	50	16.53	13.86	.99	2.97	1.98	
Pittsburg	268,709	—	—	—	—	—	—	—	
Milwaukee	250,000	—	—	—	—	—	—	—	
Nashville	87,754	24	9	8.32	8.32	—	—	—	
Charleston	65,165	39	19	7.68	2.56	7.68	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	32	12	6.26	21.91	—	6.26	—	
Fall River	87,411	38	25	13.15	21.04	10.52	—	—	
Lowell	87,191	32	10	9.39	21.91	3.13	6.26	—	
Cambridge	77,100	22	7	13.65	4.56	—	4.56	4.56	
Lynn	62,656	19	3	10.52	—	—	—	5.26	
Springfield	48,684	7	3	28.56	14.28	—	14.28	—	
Lawrence	48,365	—	—	—	—	—	—	—	
New Bedford	45,886	18	11	11.11	27.75	—	—	11.11	
Holyoke	41,278	13	7	30.76	7.69	7.69	15.38	—	
Salem	32,233	7	3	—	14.28	—	—	—	
Brookton	32,140	5	6	—	—	—	—	—	
Haverhill	31,396	15	2	—	20.00	—	—	—	
Chelsea	30,264	12	2	—	16.66	—	—	—	
Malden	29,394	8	1	12.50	12.50	—	—	—	
Newton	27,556	4	1	—	25.00	—	—	—	
Fitchburg	27,146	6	4	—	33.33	—	—	—	
Taunton	26,972	9	1	—	—	—	—	—	
Gloucester	26,688	—	—	—	—	—	—	—	
Waltham	22,058	2	0	—	50.00	—	—	—	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,802	4	0	—	—	—	—	—	
Everett	16,585	3	0	—	33.33	—	—	—	
Northampton	16,331	5	2	20.00	20.00	—	—	20.00	
Newburyport	14,073	6	0	16.66	16.66	—	—	—	
Amesbury	10,920	3	2	—	66.66	—	—	—	

Deaths reported 2,351: under five years of age 881; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 331, acute lung diseases 375, consumption 304, diphtheria and croup 163, diarrhoeal diseases 33, scarlet fever 32, measles 30, whooping-cough 26, typhoid fever 26, erysipelas 12, malarial fever 10, cerebro-spinal meningitis 7, small-pox 4.

From measles New York 14, Brooklyn 10, Cleveland 4, Philadelphia and Boston 1 each. From whooping-cough New York 6, Brooklyn and Cleveland 5 each, Philadelphia 4, Washington 3, Boston, Nashville and Fall River 1 each. From typhoid fever Philadelphia 11, Brooklyn 5, New York and Cincinnati 3 each, Cambridge, Lynn, Holyoke and Newburyport 1 each. From erysipelas New York 7, Philadelphia and Brooklyn 2 each. From malarial fever New York 5, Brooklyn 4, Nashville 1. From small-pox New York 3, Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 8th, the death-rate was 17.2. Deaths reported 3,446: acute diseases of the respiratory organs (London) 237, measles 200, whooping-cough 189, diphtheria 80, scarlet fever 51, fever 38, diarrhoea 29, small-pox (London 6, Wolverhampton, Birmingham and Nottingham 1 each) 9.

The death-rates ranged from 11.0 in Bolton to 31.3 in Wolverhampton; Birmingham 19.9, Brighton 14.9, Croydon 11.2, Huddersfield 13.2, Hull 14.5, Leeds 16.2, Leicester 14.9, Liverpool 21.3, London 17.2, Manchester 18.8, Newcastle-on-Tyne 18.8, Nottingham 18.9, Portsmouth 11.3, Sheffield 15.4, Sunderland 17.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 12, 1894, TO MAY 18, 1894.

Leave of absence for four months, on surgeon's certificate of disability, is granted MAJOR VAN BUREN HUBBARD, surgeon.

Leave of absence for three months, on account of disability, with permission to leave the Department of Texas, is granted CAPTAIN ALONZO R. CHAPIN, assistant surgeon.

MASSACHUSETTS MEDICAL SOCIETY.

ONE HUNDRED AND THIRTEENTH ANNIVERSARY.

The annual meeting will be held at 9 o'clock A. M., Wednesday, June 13, 1894, in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Meetings of Sections will be held at the Harvard Medical School Building, corner of Boylston and Exeter Streets, on the preceding day, Tuesday, June 12th.

TUESDAY, JUNE 12TH.

The laboratories and the anatomical museum of the Harvard Medical School will be open to Fellows of the Society during the day.

At 10 A. M., the Fellows of the Society are invited to visit the Massachusetts General Hospital, on Blossom Street; the Boston City Hospital, on Harrison Avenue; the Children's Hospital, on Huntington Avenue, and the Carney Hospital, South Boston.

Section in Medicine, Harvard Medical School, 2 P. M. — Dr. F. C. Shattuck, of Boston, Chairman; Dr. G. G. Sears, of Boston, Secretary. "The Protective Power of Vaccination." By Dr. J. H. McCollom, of Boston. "The Technique of Vaccination." By Dr. W. N. Swift, of New Bedford. "Radical Differences in Methods of Cultivation of Vaccine Lymph." By Dr. S. W. Abbott, of Wakefield. Discussion by Drs. J. F. A. Adams, of Pittsfield; L. F. Woodward, of Worcester; J. B. Field, of Lowell.

Section in Surgery, Harvard Medical School. — Dr. F. K. Paddock, of Pittsfield, Chairman; Dr. C. L. Scudder, of Boston, Secretary. "The Cure of Carcinoma of the Breast by Operation." By Dr. W. T. Bull, of New York City. Discussion by Drs. D. W. Cheever, J. C. Warren, G. W. Gay, M. H. Richardson, of Boston; T. F. Breck, of Springfield; S. H. Weeks, F. H. Gerrish, of Portland, Me.; J. B. Wheeler, of Burlington, Vt. *Shattuck Lecture, Harvard Medical School, 8 P. M.* — "The Range and Significance of Variations in the Human Skeleton." By Thomas Dwight, M.D., of Nahant. The lecture will be illustrated by many specimens.

COUNCILLORS' MEETINGS.

The Annual Meeting, at 11 o'clock A. M., Tuesday, June 12, 1894; Stated Meetings on Wednesday, October 3, 1894, and on Wednesday, February 6, 1895, at the Medical Library, No. 19 Boylston Place, Boston.

EXHIBIT.

In the Exhibit Hall, Mechanic Building, there will be an exhibit of crude drugs and preparations of the United States Pharmacopoeia, prepared by the students of the Massachusetts College of Pharmacy, to illustrate the revised edition of 1890.

The State and other Boards of Health will make an exhibit pertaining to Sanitary Science. That of the State Board will be the one shown at the World's Fair.

There will be the usual exhibit of surgical instruments and apparatus, electrical appliances, books, etc.

The Crematory of the Massachusetts Cremation Society, at Forest Hills, will be open to Fellows of the Society for inspection from 2 P. M., to 4 P. M., Tuesday, and can be reached by electric cars or by the Providence R. R. to Forest Hills Station.

WEDNESDAY, JUNE 13TH.

Annual Meeting, Cotillon Hall, 9 A. M. — Business of the Annual Meeting. "Ichthyol in Gynecology." By Dr. Malcolm Storer, of Boston. "Chronic Inflammation of the Seminal Vesicles." By Dr. G. W. Allen, of Boston. "The Frequency of Puerperal Sepsis in Massachusetts, its Diagnosis and Efficient

Treatment." By Dr. Edward Reynolds, of Boston. Discussion by Drs. C. M. Green, of Boston; E. H. Stevens, of North Cambridge.

Introduction of delegates.

The Annual Discourse, 12 M. — By R. H. Fitz, M.D., of Boston.

The Annual Dinner, 1 P. M. — At the close of the discourse the annual dinner will be served.

J. C. WHITE, M.D., President.

E. J. FORSTER, M.D., Treasurer.

51 Massachusetts Avenue, Boston.

F. W. GOSS, M.D., Recording Secretary.

217 Warren Street, Roxbury.

SOCIETY NOTICES.

AMERICAN MEDICAL EDITORS' ASSOCIATION. — The annual meeting of this Association will be held at the Palace Hotel, San Francisco, Cal., during the meeting of the American Medical Association.

C. H. HUGHES, M.D., President.

GEO. M. GOULD, M.D., Secretary.

I. N. LOVE, M.D., Chairman Com. Arrangements.

RECENT DEATH.

MAURICE KING HARTNETT, M.D., M.M.S.S., died in Boston, May 14, 1894, aged seventy years. He graduated from the Harvard Medical School in the class of 1859.

BOOKS AND PAMPHLETS RECEIVED.

The Seventieth Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn., April, 1894.

The Tubercular Diathesis Controlled by Gold and Manganese in Combination. By J. Blake White, M.D. Reprint. 1894.

About Mushrooms; A Guide to the Study of Esculent and Poisonous Fungi. By Julius A. Palmer, Jr. Boston: Lee & Shepard. 1894.

Zur Behandlung der Lungentuberculose mittels Kochscher Injectionen. Von Dr. E. Thörner, Sanitätsrath in Berlin. Berlin: S. Karger. 1894.

Catalogue of the Library of the Royal Medical and Chirurgical Society, Supplement VII, Additions to the Library 1892-3. London: Printed for the Society. 1893.

Emergency and Hygienic Notes for the Militia. By William H. Devine, M.D., Surgeon, Ninth Regiment, Massachusetts Volunteer Militia. Boston: Damrell & Upham. 1894.

The Drainage of Fitchburg, Comprising Remarks on the Subject of Drainage in General and the Disposal of Sewage and other Waste. By Clarence W. Spring, M.D., City Physician, Fitchburg.

Transactions of the New York State Medical Association for the Year 1893. Volume X. Edited for the Association. By E. D. Ferguson, M.D., of Rensselaer County. Published by the Association.

China, Imperial Maritime Customs, II Special Series: No. 2, Medical Reports for the Year ended March 31, 1890, 38th and 39th issues. Shanghai: Published by order of the Inspector-General of Customs. 1894.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the seventy-sixth. (Second series, volume the fifty-eighth.) London: Longmans, Green & Co. 1893.

On the Features which Distinguish Epidemic Roseola (Rose-rush) from Measles and from Scarlet Fever. By Clement Dakes, M.D., B.S., Lond., M.R.C.P., Physician to Rugby School, etc. London: J. & A. Churchill. 1894.

Hydatid Disease. Vol. II. By the late John Davies Thomas, M.D. (Lond.), F.R.C.S. (Eng.). A Collection of Papers on Hydatid Disease. Edited and arranged by Alfred Austin London, M.D. (Lond.) Sidney: L. Bruck. 1894.

On Amblyopia from Di-Nitrobenzol: with Remarks on the Employment of this Substance in the Making of Certain Explosives and its Effects on those engaged in the Manufacture. By Simeon Snell, F.R.C.S., Edin., etc. Reprint. 1894.

An Aid to Materia Medica. By Robert H. M. Dawbarn, M.D., Professor of Operative Surgery and Surgical Anatomy, New York Polyclinic. Third edition, revised and enlarged. By Woolsey Hopkins, M.D. New York: G. P. Putnam's Sons. 1894.

Rapports et Mémoires sur le Sauvage de l'Oveyron l'Idiotie et la Surdi-Mutité, par Itard avec une Appréciation de ces rapports par Delasiauve. Préface par Bournville, Eloge d'Itard par Bousquet avec portrait du Sauvage. Paris: Publications du Progrès Médical. 1894.

Address.

THE RISE AND FALL OF THE LICENSED PHYSICIAN IN MASSACHUSETTS, 1781-1860.¹

BY REGINALD H. FITZ, M.D., OF BOSTON.

GENTLEMEN:—In calling to order the Ninth Annual Meeting of our Association I desire to express the highest appreciation for the honor you have bestowed upon me in appointing me to preside over your proceedings. To conduct the affairs of so aristocratic a democracy has been made a task so easy that the gift of persuasion, or the knowledge of parliamentary law become wholly unnecessary qualifications. The one obligation which has weighed somewhat heavily is the thought of the opening address which is to prepare the way for such communications as you are to make for the advancement of scientific and practical medicine—all the more as my own attention has been particularly directed for the past few months toward a class of practitioners who have no idea of scientific medicine, and whose only thought of the practice of medicine is how much money can be made out of it. It may not be uninteresting to learn what men like yourselves, many years ago, did in order to discourage such persons—what they planned, what they accomplished, and why they failed. I will, therefore, ask your attention to the rise and fall of licensed physicians in Massachusetts, 1781-1860.

In the "Records of the Governor and Company of the Massachusetts Bay in New England" (1854, III, 153), is to be found the first legislation concerning the regulation of medical practice in Massachusetts. On the 3d of May, 1649, the General Court, held at Boston, voted as follows:

"Forasmuch as the lawe of God (Exod. 20:13) allowes no man to touch the life or limme of any pson except in a judicyall way, bee it hereby ordered and decreed, that no pson or psons whatsoever that are employed about the bodyes of men, woemen, and children for preservation of life or health, as phisitions, chirurgians, midwives, or others, shall presume to exercise or putt forth any act contrary to the knowne rules of arte, nor exercise any force, violence, or cruelty vpon or towards the bodyes of any, whether young or old,—no, not in the most difficult and desperate cases—with out the advice and consent of such as are skillfull in the same arte, if such may be had, or at least of the wisest and gravest then present, and consent of the patient or patients, (if they be mentis compotes,) much lesse contrary to such advice and consent, vpon such punishment as the nature of the fact may deserve; wch lawe is not intended to discourage any from a lawfull vse of their skill, but rather to encourage and direct them in the right vse thereof, and to inhibit and restrayne the presumptuous arrogance of such as through præfidence of their owne skill, or any other sinister respects, dare be bould to attempt to exercise any violence vpon or towards the bodies of young or old, to the prejudice or hazard of the life or limme of men, woemen, or children."

Until the years immediately preceding the War of the Revolution there was no more stringent regulation of medical practice than this. But in 1760 the City of New York had found it necessary to regulate the practice of medicine within its limits on account of the abundance of quacks preying upon the community. Five years later the Medical School of the University of Pennsylvania was established, and in the following year the New Jersey Medical Society was founded.

In still another year the Medical School of Columbia College began its career; and in 1771 the colony of New Jersey passed its act regulating the practice of medicine, to be followed in 1774 by the abortive attempt in Connecticut.

The years thus ripe in revolutionary ideas and acts produced their fruit in Massachusetts.

Although there were excellent physicians in the larger cities and towns of the Commonwealth, and several of them possessed medical degrees received in Europe, they were few and far between. Most practitioners had served merely a sort of apprenticeship to their seniors. There was no medical school in the State, and but two in the country, and these almost as remote as the leading schools of Europe at the present day. Any one undertook the study of medicine in such manner as he saw fit, and entered his practice with as little preparation as he chose. A considerable number of wholly unqualified practitioners thus were to be found, a source of danger to the community, a disgrace to the name of physician, and a cause of jealousy, contention and distrust, among the members of the profession.²

The example set by New Jersey and New York was one which demanded a speedy following, and thirty-one of the leading physicians of Massachusetts, sixteen being from towns outside of Boston, became incorporated as the Massachusetts Medical Society, "that a just discrimination should be made between such as are duly educated, and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer medicine whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community."

That this purpose might be carried out, the President and Fellows of the Society or their appointees from its members were given "full power and authority to examine all candidates for the practice of physic and surgery, who shall offer themselves for examination, respecting their skill in their profession, and if upon such examination, the said candidates shall be found skilled in their profession, and fitted for the practice of it, they shall receive the approbation of the Society in letters testimonial of such examination," etc. They were obliged, under penalty, to hold this examination, although candidates were not obliged to present themselves for approval.

The State thus did not prevent the practice of medicine by any one, but it implied that the letters testimonial of the Society discriminated between the duly educated and properly qualified, and the ignorant and wicked. By the limitation of the maximum membership to seventy, admission to the fellowship became a proof of distinction which the better educated and higher minded physicians were proud to attain. This number, furthermore, gave evidence of the comparatively few physicians in the State at that time, who were considered worthy of this high distinction. Indeed, it repeatedly happened in the early life of the Society that it was impossible to secure the attendance of a sufficient number of Fellows to form a quorum to transact business.

Two years after the incorporation of the Medical Society the Medical School of Harvard College was established; and it was feared that the power of Harvard College to examine medical students and grant degrees in medicine might interfere with the authority

¹ The President's Address at the Ninth Annual Meeting of the Association of American Physicians held in Washington, May 29, 1894.

² Proceedings of the Massachusetts Medical Society, 1831, 19.

of the Society to examine candidates for practice and issue letters testimonial. According to the memorial of Dr. John Warren in 1811, this "would have produced the most unhappy effects, but for the repeal of an exceptionable article in that establishment, and the accommodating conduct of those who, at that time, were the guardians of science and the patrons of the healing art."³

But doubts arose with reference to the duties and powers of the Society concerning the examination of candidates and its authority to demand and receive compensation for its services and an act in addition to the act of incorporation was passed in 1789. It was therein made the duty of the Society, "in order more effectually to answer the designs of their institution, from time to time to describe and point out such a medical instruction, or education, as they shall judge requisite for candidates for the practice of physic and surgery, previous to their examination before them . . . and they shall cause the same to be published in three newspapers in three different counties within this Commonwealth."

The Society continued to fail in its object to create a proper standard of medical qualifications. The population of the State rapidly increased, and the number of practitioners likewise. There was no sufficient inducement to lead physicians to apply for the approval of the Society; and in the first twenty years of its existence only some twenty candidates had received the testimonials in approval of their professional skill.⁴ In the same period Harvard had conferred its medical degree upon thirty candidates.

Early in the present century Dr. John D. Treadwell, a young, learned, devoted and public-spirited physician of Salem, impressed with the inability of the Society to accomplish its aims, endeavored to improve its usefulness. An extensive correspondence was instituted among the members and with the assistance of Mr. Sewell, afterwards Chief Justice of the State, a bill was drafted, which, somewhat modified, was enacted in 1803.

The Massachusetts Medical Society, as it now exists, was then instituted; and its plan of organization became a model for other State Societies. It was no longer a close corporation with a limited membership, but it was possible for every physician in the State to become a Fellow. It was only necessary that he should have been a student in medicine agreeably to the regulations of the Society, and pass a satisfactory examination before the censors, after which he received a license to become a practitioner of medicine or surgery; "and after three years of approved practice in medicine and surgery, and being of good moral character, and not otherwise," he became a member of the corporation by subscribing to the by-laws.

The medical graduates of Harvard University were made licentiates without passing an examination, since the right to confer degrees had been granted Harvard College long before the Massachusetts Medical Society was incorporated. "The only means of avoiding collision with that ancient and respectable institution was by the compromise which was adopted."⁵

A duly licensed physician in Massachusetts in 1804 was required to give satisfactory evidence of the following qualifications before being admitted to exami-

nation for the license: Some acquaintance with Latin and Greek, and with the principles of geometry and natural philosophy; three full years of study under the direction of some respectable physician or physicians whose practice he must have attended. During this time he must have read the most approved authors in anatomy, physiology, chemistry, *materia medica*, surgery, and the theory and practice of physic. He was examined in physiology, pathology, therapeutics and surgery.

There was still no obligation on the part of any practitioner to present himself for license; and the only privilege enjoyed by the licensed physician, apart from the right to attend the meetings of the Society and the use of its libraries, was exemption from service in the militia.

Notwithstanding the Act of 1803 made it possible for every properly qualified physician to become licensed and a member of the Society, it proved necessary to take further steps to bring them within the fold, and in 1806 a by-law was passed in the following terms:

"To promote the laudable design of the Legislature, in forming and incorporating this Society, to prevent as far as may be all unqualified persons from practising medicine or surgery, and in order to discourage empiricism and quackery: it shall be deemed disreputable and shall be unlawful, for any fellow of this Society, in the capacity of physician or surgeon to advise or consult with any person, who having been a fellow of the Society, shall be expelled therefrom, or with any person whatever, who shall thereafter commence the practice of medicine or surgery within this Commonwealth, until he shall have been duly examined and approved by the censors of the Society or by those of some district society," etc.

The object of this by-law was to guard the public against ignorant, designing and unscrupulous pretenders. The Society had provided the means by which physicians could give evidence of having followed a suitable course of study, and it was its duty to inform the public that if it employed unlicensed practitioners it must suffer the consequences.

Notwithstanding these attempts at compelling practitioners to become educated physicians, the standard was evidently too high for all to attain. Many could not comply with the requirements; others did not find a sufficient inducement in the honors and privileges bestowed by the Society. The Thomsonians, then beginning their career, required no education and no license. There was no law to prevent their entering practice; and Chief Justice Parsons⁶ had then made his famous decision in the case of the Commonwealth v. Thomson, "that if the prisoner acted with an honest intention and expectation of curing the deceased by this treatment, although death, unexpected by him, was the consequence, he was not guilty of manslaughter. . . . There is no law which prohibits any man from prescribing for a sick person with his consent if he honestly intends to cure him by his prescription; and it is not felony, if through his ignorance of the quality of the medicine prescribed or of the nature of the disease or of both, the patient, contrary to his expectation, should die."

The Chief Justice evidently felt that there was likely to be need of some legislation which should prevent the occurrence of such cases, for he closes his decision by saying: "It is to be exceedingly lamented

³ Dr. S. A. Green's Centennial Address, Med. Comm. Massachusetts Medical Society, 1876-81, xii, 639, 604.

⁴ Dr. James Jackson's Speech at the Annual Dinner, 1856.

⁵ Proceedings Massachusetts Medical Society, 1831, 26.

⁶ Massachusetts Reports, 1809, vi, 124.

⁷ Loc. cit., p. 142.

that people are so easily persuaded to put confidence in these itinerant quacks, and to trust their lives to strangers without knowledge or experience. If this astonishing infatuation should continue, and men are found to yield to the impudent pretensions of ignorant empiricism, there seems to be no adequate remedy by a criminal prosecution, without the interference of the legislature, if the quack however weak and presumptuous, should prescribe, with honest intentions and expectations of relieving his patients."

In 1811 an unsuccessful attempt was made to incorporate a rival society with the same privileges as those enjoyed by the Massachusetts Medical Society, under the title of the Massachusetts College of Physicians. The announced reason was that two Societies were better than one; the real object was thought to be the establishment of a new medical school.

The Massachusetts Medical Society strongly opposed the scheme, on the ground that it was unnecessary and would lead to the rejected candidates of the one society being accepted by the other, whatever might be their qualification, thus producing disagreements and animosities injurious to the profession and to the public.⁸

It is possible that in consequence of the recommendation of Chief Justice Parsons, certainly with the view of discouraging quackery which was rapidly increasing under the influence of Thomson, the legislature in 1818 passed its first "Act regulating the Practice of Physick and Surgery," which was supplemented in 1819 by "an Act in addition to an Act entitled 'an Act regulating the practice of Physick and Surgery.'"

According to the first of these acts, no person entering the practice of physic and surgery within the State could recover by law any debt or fees for his professional services unless he had received a medical degree from some college or university or had been duly licensed by some medical society or college of physicians or by three Fellows of the Massachusetts Medical Society, designated in each county by its councillors, with power to examine candidates and grant licenses. Copies of these licenses were to be deposited with the clerk of the town, district or plantation in which the licentiate resided.

In the Act of 1819, that the physician might recover his debts by law, it was necessary that he should be a licentiate of the Society or a Medical Graduate of Harvard. If the candidate for the license was educated out of the State, the censors might waive a new examination if they were satisfied that he had received an education agreeably to the regulations provided by the Society.

It is stated⁹ that this difficult trust was accepted with reluctance,¹⁰ that the law was not sought for by the Society, and that it was doubtful whether its action was not rather injurious than beneficial. Of this law Chief Justice Shaw said:¹¹

"It appears to us that the leading and sole purpose of this act was to guard the public against ignorance, negligence and carelessness in the members of one of the most useful professions, and that the means were intended to be adapted to that object. If the power of licensing were given to the Medical Society exclusively, there would be much more plausible ground, at least, to maintain that the power was conferred on a body who would have a temptation to abuse it, so as

to promote their private interests; but where the power is conferred equally on the university charged with the great interests both of general and professional education, and which cannot be perceived to have any such interest, that ground of argument seems to be wholly removed, and it seems difficult to perceive how a power which it is important to the community should be placed somewhere could be placed more safely. The courts are all of the opinion that the law in question is not repugnant to the Article of the Bill of Rights, above cited, and that its validity cannot be impeached on the ground that it is a violation of any principle of the constitution."

The licensing of physicians by the Society doubtless aided in restraining a certain number of practitioners from adopting some of the methods of the charlatan; but it did not interfere with the encouragement of the latter by the community. I am indebted to Dr. John Homans, 2nd, for the opportunity of quoting from a letter of Dr. George C. Shattuck to Dr. Homans, written July 26, 1828. It gives evidence of the fondness for quackery in Boston at that time.

"The city has 60,000 (inhabitants?) and seventy-one regularly bred physicians. About one-half, from either youth or age, have not much to do. The irregular physicians are numerous, at the head of which, in popular influence, we may place Thomson, who has formed his botanical society, who have individually learned his system of practice by hot drops and sweating, etc. The disciples of this system, perhaps, may embrace one-sixth of the population of Boston. The patent medicines are employed in about, I believe, another sixth of the cases."

In 1831 the Society had reached such a degree of success in carrying out the objects of its incorporation that it included in its ranks "nearly every educated practitioner of medicine or surgery in the State."¹²

The line of distinction was so strongly drawn between its members and irregular practitioners "that the profession is no longer made responsible in the minds of men for the consequences of their ignorance and malpractice, nor its harmony disturbed by their misconduct; and they are much less successful than formerly in diverting the confidence of the community from regular physicians to themselves."¹³

At this time, however, there were certain discordant elements within the Society which threatened its prosperity and usefulness. Some of the younger physicians were dissatisfied with the clause in the act of 1803, which demanded a period of three years of probation in practice before admission to full membership in the Society. The legislature was therefore requested to repeal this clause, which it did by a special act in 1831, and approved candidates became at once Fellows of the Society.

A more serious disturbance, which menaced the harmony and influence of the Society at this time, was the appeal to the legislature from the physicians of Berkshire County, in the western part of the State. They desired to be incorporated as an independent body, nominally on account of their distance from the headquarters of the Society, their limited privileges, and their dissatisfaction with the requirements of the censors. It was supposed that this action was largely planned in the interests of the Berkshire Medical Institution, a medical school incorporated in 1823, but without the authority to confer the degree

⁸ Dr. S. A. Green's Centennial Address, p. 351.

⁹ Proceedings Massachusetts Medical Society, 1840, p. 68.

¹⁰ Loc. cit., 1831, 10.

¹¹ Hewitt v. Charier, Jr., 16 Pick., 835.

¹² Proceedings Massachusetts Medical Society, 1831, 18.

¹³ Loc. cit., 1831, 19.

of Doctor of Medicine.¹⁴ It was situated in Pittsfield, and was practically a department of Williams College (not far distant), which had the power to confer degrees, but no medical faculty or medical school. Williams College sanctioned the degree of the candidates educated at the Berkshire Medical Institution. The conditions of this alliance proved important in the courts¹⁵ when the honorary degree of M.D. from Williams College was offered in evidence as a legal qualification. It was decided that it was invalid, since the defendant must have both the education and the degree to be a legally qualified practitioner.

In the year following the incorporation of the Berkshire Institution it had petitioned the legislature to be granted the same privileges as belonged to the medical graduates of Harvard University, the most important of which was that of being acknowledged and received by the Massachusetts Medical Society without examination as regular practitioners of medicine and surgery.

At that time this petition was successfully opposed, on the ground that the Berkshire Institution had no independent board of overseers like Harvard College, and therefore was not under the same restrictions and oversight. The petition to form an independent society was also successfully opposed; but in 1837, with the approval of the Society, an act was passed, according to which graduates of the Berkshire Medical Institution were "entitled to all the rights, privileges and immunities granted to the medical graduates of Harvard College."

The rights and privileges of the licentiates of the Massachusetts Medical Society had been somewhat extended by the Anatomical Law of 1834, according to which "the dead bodies of such persons as it may be required to bury at the public expense might be surrendered to any regular physician duly licensed according to the laws of this Commonwealth."

The State had thus definitely committed itself to the regulation of the practice of medicine by the Acts of 1818 and 1819, and had placed the duty of licensing practitioners in the hands of the Massachusetts Medical Society. It conferred but few privileges on the licensed, namely, exemption from militia service and jury duty, the right to obtain and dissect the unclaimed bodies of those to be buried at the public expense, and to collect fees by law.

But unlicensed physicians could take their pay in advance, and were not desirous of the privilege of consulting with the members of the Society. The Thomsonian movement was rapidly spreading throughout the country, appealing to the people by its simplicity and economy, its dogmatic assertions and reports of wonderful cures, its advocacy of vegetable remedies, and its cry of persecution.

The efforts of the Society to include within its ranks all educated practitioners, led in 1836 to the recognition of dentists as practitioners of medicine, since dental surgery was being studied and pursued scientifically by gentlemen of regular medical education.¹⁶

In the following year a further attempt was made in this direction by requiring that every licentiate or medical graduate of Harvard or Berkshire entitled to admission to the Society must enter within a year after being so entitled or be deemed an irregular practitioner.

This term was applied to all practitioners in the State who were not fellows or licentiates of the Society, or doctors in medicine of Harvard or Berkshire. The above regulation was repealed three years later, since it took away "the freedom originally intended to be allowed to all regular physicians to join the Society or not, as they pleased," and stigmatized "as irregular practitioners gentlemen who have been recognized as competent physicians merely for the exercise of this freedom."¹⁷

In 1836, the Statutes of the Commonwealth were revised, and the report of the commissioners (1835, Part I, 125) includes all the legislation previously enacted, placing the control of the licensing of physicians in the power of the Society.

But the legislature did not accept the first section, which read as follows:

"No person who has commenced the practice of physic or surgery, since the year one thousand eight hundred and eighteen, or who shall hereafter commence the practice thereof, shall be entitled to maintain any action for the recovery of any debt or fee accruing for his professional services, unless he shall, previously to rendering these services, have been licensed by the officers of the Massachusetts Medical Society, as hereafter provided, or shall have been graduated a doctor in medicine in Harvard University, or in the Berkshire Medical Institution, by the authority of Williams College."

It also negated a clause making the neglect to record a license a like disqualification to its non-possession.

The legislature approved this part of the report of the committee with the above exceptions, and it became Chapter 22 of the Revised Statutes entitled "Regulations Concerning the Practice of Physic and Surgery."

According to Dr. J. Mason Warren¹⁸ the first section was omitted in accordance with the wishes of the greater part of the (State Medical) Society, as being in its action adverse to their interests. It served merely to excite sympathy, especially for the Thomsonians, and could not prevent them from receiving fees for services rendered.

The Society continued in its work of licensing physicians without apparent disturbance until 1848. At this time its effect in controlling the conditions of medical practice in the State is thus expressed by Dr. A. L. Peirson, of Salem, in behalf of a committee of which he was chairman:¹⁹

"We have steadily elevated our profession, by improving medical education, encouraging the harmony and honorable intercourse of its members, and have protected from the mischief of quackery, by discouraging every show of it among regular practitioners. This simple and efficient plan of the Society has accomplished all that was ever intended by its organization in 1803. . . . It is to be regretted that from natural causes, no way to be attributed to the form of organization, the concentrated action of the Society has not been equally felt in all parts of this extended Commonwealth."

According to Dr. Z. B. Adams,²⁰ there were at this time 1,237 medical practitioners in Massachusetts, most of whom belonged to the Massachusetts Medical Society.

On the contrary, Dr. J. V. C. Smith presented the

¹⁴ Proceedings of the Massachusetts Medical Society, 1836, 25.

¹⁵ Wright v. Lanokton, 19 Pick., 291.

¹⁶ Proceedings of the Massachusetts Medical Society, 1836, 116.

¹⁷ Proceedings of the Massachusetts Medical Society, 1840, 72.

¹⁸ Transactions of the Medical Society of the State of New York, 1841-1845, 1846, vi, app. 40.

¹⁹ Proceedings of the Massachusetts Medical Society, 1848, 112.

²⁰ Transactions of the American Medical Association, 1845, 1, 306.

minority report of the same committee, in which he states :²¹

"The Society was once eminently useful in protecting the community from the encroachment of ignorant pretenders, . . . and it must be obvious to all that circumstances have greatly changed, our legislative tables have been completely turned, and will probably ever remain so. A license, or medical degree, is no longer requisite for the practice of medicine in Massachusetts, and no laws of the State, or of the Massachusetts Medical Society, are of any avail in guarding the entrance into the profession, or regulating the conduct of its members. . . . Less than one-half of the regular practitioners of medicine now nominally constitute the Society. In Berkshire, there are one hundred; less than twenty belong to the Society. In Hampden, one hundred and thirty (about); and of this number only about twenty or twenty-five are members of the State Society. In some other counties there is doubtless a majority, while in others not one-half of the regular physicians are members. The number of Fellows of the Massachusetts Medical Society is not far from seven hundred, which is not probably one-half of the physicians in the State."

These reports were called forth by a resolution presented by Dr. Childs, of Pittsfield, involving a change in the organization of the Society for the purpose of advancing medical science, promoting harmony and good feeling in the profession, thereby contributing to the best interests of society.

Although the councillors largely favored the views expressed in the majority report, the existence of a considerable degree of dissatisfaction and the necessity of remedying it was apparent in the appointment of a committee to consider the question of altering the by-laws. This committee consisted of Drs. John Ware, A. L. Peirson, W. Lewis, J. Jeffries, J. V. C. Smith, H. H. Childs and John C. Dalton. The report of this committee is especially valuable from the character of the latter and the recognition of the necessity of the Society to increase and consolidate its strength.

They found²² that many members had often expressed the opinion that the Society as constituted did not accomplish all of the purposes of which it was capable—and failed to secure the favor of the profession in remote parts of the State. Consequently only a limited number of physicians found it for their interest to become members. They were called upon to obey laws which they had no voice in making and to contribute to the expenses of an organization in which they found it difficult to take part. The Society was but little known to those among whom they are thrown, thus has but little influence over them, and it was not necessary to their reputable standing among physicians nor to their success with the community that they should be connected with it.

The committee reported various amendments to the by-laws involving favorable action of the legislature which took place in 1850. By-law V permitted any reputable practitioner of medicine or surgery who had been in practice not less than fifteen years, to be admitted a Fellow, previously to 1852, by the District Society where he resides by a vote of two-thirds of the members present at any stated meeting.

The Society was thus endeavoring to increase its influence in the one direction by licensing as many educated and intelligent physicians as possible, and even without examination in certain instances.

This liberality, however, was to be controlled by

what many now see to have been an unwise policy, namely, the treatment of the homœopathists.

In 1846²³ an applicant for membership stated that he had great confidence in the efficacy of medicine "especially when prepared and prescribed agreeably to the directions of Hahneman." The councillors referred the application to the censors, with full powers to settle the matter, and they admitted the applicant to membership.

In the meantime the influence of homœopathy was increasing, and in 1850²⁴ it was moved "that all homœopathic practitioners are, or should be, denominated irregular practitioners, and, according to the By-Laws of this Society, made and provided, ought to be expelled from membership." This resolve was tabled on motion of Dr. Bigelow.

At the next meeting, Drs. Hayward, O. W. Holmes and J. B. S. Jackson were appointed a committee "to devise some course of action, to be pursued by the Society, in regard to all homœopathists." This committee reported as follows :²⁵

"(1) *Resolved*, That any Fellow of this Society who makes application to resign his Fellowship in consequence of having adopted the principles and practice of homœopathy may be permitted to do so on paying his arrearsages; but he shall not be entitled to any of the privileges of Fellowship, nor shall his name be retained in the list of Fellows.

"(2) *Resolved*, That a diploma from a homœopathic institution shall not be received as any evidence of a medical education; nor shall the Censors of the Society regard the attendance on the lectures of such institutions, nor the time passed at them, as qualifications which shall entitle candidates to an examination for a license from this Society."

This report was adopted. Three years later the question of homœopathy was again brought before the Society at the annual meeting.²⁶ The Essex North District Society there presented the following resolution :

"Forasmuch as there is no common ground of support or sympathy between homœopathy and allopathy;

"*Resolved*, That if the homœopathists are allowed to retain their regular standing in the Massachusetts Medical Society, and claim fellowship and counsel with allopaths, we, as consistent and conscientious individuals, request to be honorably discharged from our allegiance and connection with the parent society."

Dr. Spofford presented the following resolution :

"That, while we recognize the right of regular physicians to use medicine in any quantity or doses which they may consider useful to their patients, we consider all use of the name of homœopathy in public papers, on signs or otherwise, as quackish and disreputable, and that all persons who make pretensions to homœopathic practice ought to be excluded from the Society."

These resolutions, together with the whole subject, were referred to the councillors, who appointed the following committee to report upon them: Drs. Bigelow, Metcalf, M. Wyman, Spofford and Alden. Dr. Jacob Bigelow reported in February, 1854, and his report was laid on the table.

In the next year,²⁷ the censors of the Suffolk District Society rejected a candidate for admission who avowed himself practising upon the principles styled

²¹ Proceedings of the Massachusetts Medical Society, 1848, 108.

²² Loc. cit., 1850, 32.

²³ Loc. cit., 1850, 51.

²⁴ Loc. cit., 1853, 102.

²⁵ Loc. cit., 1855, 7.

²⁶ Proceedings of the Massachusetts Medical Society, 1848, 150.

²⁷ Loc. cit., 1848, p. 165.

homœopathy, on the ground that he was not "fitted for the practice of medicine." It was voted (February 7, 1855), on motion of Dr. Bowditch, "that the Councillors approve of the course adopted by the Censors of the Massachusetts Medical Society for Suffolk District."

In the following June this district society called the attention of the general society to defects in the by-laws concerning the expulsion of members, with reference to a remedy; and this question, together with that concerning the admission of members, was referred to a committee for a report. A few days later the latter reported. Their report was referred to the councillors for adoption. They, in turn, referred the report to a committee, which altered the recommendations; these were adopted by the councillors in February, 1856, and by the Society on May 29, 1856.

These alterations made it possible to expel a member for any breach of the by-laws, for which censure, expulsion or deprivation of privilege was a penalty, and for any conduct unbecoming and unworthy an honorable physician and member of the Society, in addition to causes hitherto deemed sufficient. A carefully arranged method of conducting trials for offences was also provided. The report of the committee of the councillors recommending these alterations stated that they had no definite measures to offer with regard to homœopathy, and submitted the subject to the judgment of the councillors. This part of the report was laid on the table without debate.²²

June 3, 1856, four days after the adoption of the amended report by the Society, the Homœopathic Medical Society was incorporated by the legislature. It was authorized to examine all candidates for membership, and, if qualified, give them the approbation of the Society. Its members were declared exempt from militia service.

In the following year, the motion that all candidates for the fellowship be examined by the censors was referred to a committee, reported upon favorably, and the legislature passed a special act March 5, 1859, making this method the law.

At this time the revision of the statutes was again under consideration, and the commissioners had made their report to the legislature, in which the existing laws concerning the regulation of the practice of medicine were included. This report was referred to a joint committee, which was subdivided into special committees. The general committee referred the chapter concerning the regulation of medical practice to one of these special committees on May 16, 1859. It instructed this committee, "by special order, to inquire into the expediency of omitting all that part of the chapter relating to the Massachusetts Medical Society and to the regulation of the practice of medicine; and on the 21st of May they reported to the general committee amendments striking out every section, and every line, and every word in that chapter which gave the Massachusetts Medical Society any power to examine or license physicians or surgeons, or to prescribe a course of study and qualifications for physicians or surgeons."²³

Four days later, the councillors appointed a committee, consisting of Drs. J. Bigelow, A. A. Gould, J. Jeffries, G. C. Shattuck, H. J. Bigelow, H. H. Childs

and J. G. Metcalf, and "instructed them to look after the interests of the Society in the legislature," and they were "authorized to take such measures to protect their interests as they may deem expedient."²⁴

But, in the words of Mr. Benton, "The general committee adopted these proposed amendments, with the addition of a change of title of the act from 'Regulations concerning the Practice of Physic and Surgery' to 'of the Promotion of Anatomical Science'; and that chapter now stands, with the same title as Chapter 81 of the Public Statutes. All the amendments were adopted by the legislature, and were enacted December 28, 1859. . . . The legislature then deliberately took out of the law of the Commonwealth every provision for the regulation of the practice of medicine or surgery, or for the examination or qualification of physicians or surgeons."

The committee of the Society appointed to look after its interests in the legislature recommended, October 5, 1859, that "no person shall hereafter be admitted a member of the Society who professes to cure diseases by Spiritualism, Homœopathy or Thomsonianism," which was adopted. As evidence of the state of feeling at the time, it may be said that at the meeting at which this resolution was approved, it was voted that the Society disclaim all responsibility for the sentiments contained in the annual address of the day previous. This had been delivered by Oliver Wendell Holmes, and was entitled, "Currents and Counter-Currents of Medical Science."

Thus we see that the Massachusetts Medical Society was organized in 1781 with the express purpose of making a just discrimination between duly educated and properly qualified practitioners and those who ignorantly and wickedly administer medicine. For many years its Fellows acted most judiciously in endeavoring to include within their number every educated and moral practitioner in the State. They accomplished this largely by the force of example, association and united encouragement. The State made them the sole source of licenses to practise. The progress of Thomsonianism left their responsibilities essentially intact. The advent of homœopathy found them weak where they should have been strong, short-sighted where they should have been far-seeing. The leaders were obliged to follow, and the reproval of the censors prevailed against the wisdom of the councillors.

Homœopathic diplomas and homœopathic certificates are now accepted by the Society. Homœopathic physicians have been found fitted to practise by the great public, which decides this question for all. Ten years of increasing intolerance destroyed seventy years of enthusiastic effort, devoted labor, tactful management and wise council in the public interest. The State revoked the control of medical practice, and the people have been the sufferers. The history of Massachusetts in this respect is the history of the country. She was one of the last of the States to lay down the control, and she will be one of the last to resume it.

Thanking you for the patience with which you have listened to an historical narrative which offers but little in the way of moral or example to our own Association, we will proceed to the business of the day.

MRS. HUMPHREY WARD, the novelist, is said to be suffering from writer's cramp.

²² Proceedings Massachusetts Medical Society, 1856, 35.
²³ Argument of J. H. Benton, Jr., before the Committee on Public Health, 1858.

²⁴ Proceedings Massachusetts Medical Society, 1859, 112.

Original Articles.

METHODS OF TEACHING SURGERY.¹

BY JOHN S. BILLINGS, M.D., SURGEON UNITED STATES ARMY.

THIS paper has been prepared at the request of the Committee on Programme, to serve as an introduction to a discussion upon the best methods of teaching surgery, and is intended to ask questions rather than to answer them. We have to consider: (1) Who are to be taught? (2) What is to be taught? (3) How it is to be taught.

Those who are to be taught include two classes: (1) The average medical student, who is presumably to become a general practitioner; (2) The men who wish to specially fit themselves for surgical work. There is a third class, namely, those who wish to learn only the least possible amount of surgery which will enable them to get the degree of M.D., but these we need not consider to-day.

The surgical instruction to be given the average student depends on what he is required to know of anatomy and pathology before he begins his surgical studies, upon the amount of time which is allowed for surgical instruction, and upon the nature of the final examination which he must pass to obtain his degree, or license to practice.

In any case it should include the diagnosis, and best method of treatment, of the injuries and surgical diseases which the general practitioner is most often called upon to treat, including recent wounds and their complications, erysipelas, abscess, ulcers, etc.; fractures and dislocations, injuries of blood-vessels, strangulated hernia, urethral stricture, retention of urine and its consequences; obstruction of, or foreign bodies in, the air passages; and also the selection and administration of anesthetics, the details of aseptic and antiseptic methods, and of methods of performing the most usual amputations and ligations of blood-vessels.

Let us suppose that the instruction is to be given in a three-years' graded course; what other subjects besides those above mentioned ought to be fully treated of by the surgical teacher? Under such circumstances is it worth while to go into the details of cerebral and abdominal surgery, of lithotomy and lithotripsy, of excisions of organs or of the jaws and joints, of plastic and orthopædic surgery? Is it not enough to tell the average student what can be done in these directions, and refer him to special courses or to current literature for further information with regard to complicated and difficult operations requiring special instruments and apparatus? Of course, it is to be practically demonstrated that the teacher is the proper person to whom cases of this kind should be sent.

Deferring for a moment the consideration of the needs of the man who wishes to become a surgeon, we come to the question, "How are these subjects to be taught?" There are five principal methods: (1) Didactic systematic lectures; (2) recitations; (3) demonstrations and practical instruction by means of manikins, dummies, cadavers, and operations on animals, in the details of treatment of wounds, bandaging, dressings and operations; (4) theoretical clinical lectures, in which cases and operations are shown in an amphitheatre; (5) practical clinical instruction to small groups of students or ward classes, in which, as

far as possible, each student has something to do in the diagnosis or treatment or both.

The modern tendency is to reduce the time given to systematic lectures. In discussing the wisdom of this, we must bear in mind the different organization of the teaching staff in different schools, the increasing number of chairs or lectureships devoted to specialties, and the fact that the precise division of subjects among the instructors in a given school must depend to a considerable extent on local conditions, on the character, tastes and teaching-powers of the different men who make up the faculty, on the amount and character of the facilities for laboratory and clinical teaching present, etc.

In the old-fashioned type of medical school, in which the whole instruction was given by seven or eight men, the professor of surgery taught what was called surgical pathology, or the principles of surgery, gave considerable attention to surgical anatomy, and was the clinical as well as the systematic teacher. There was at least one advantage, namely, that the teaching was consistent and harmonious; the student was not much bewildered with the conflicting views of different professors. The professor of anatomy was in training for the chair of surgery and took very little interest in comparative anatomy or in embryology. There was no professor of pathology; and both the professor of surgery and of medicine lectured on inflammation, congestion, suppuration, etc., each from his own point of view.

At present, in a large and popular medical school, there are from twenty to thirty teachers of various grades; there is a professor of pathology, of surgery, of clinical surgery, of surgical anatomy, of orthopædic surgery, of genito-urinary surgery, etc., and the professor of gynecology takes a large share of the abdominal surgery.

Now how can the subject of surgery be subdivided among all these teachers in such a way that the whole field shall be covered, without involving useless repetitions, embarrassing contradictions, and the expenditure of an undue amount of time and labor by the student, or of the production of heart-burnings in some of the teachers? This is one of the most difficult problems in the organization of a large medical school which is to be really efficient and popular, and it is one to which no general and universal formula is applicable.

Theoretically, each professor being a thoroughly wise, unselfish, good-tempered man, desiring only the best interests of his pupils and of his school, and there being frequent consultations between them to secure harmony in their teachings, the desired result may be obtained. Practically there are usually two or three strong men in the faculty who settle what shall be done, and the rest find it expedient to submit, although they may not agree. When there are no sufficiently strong men, and all the professors are not perfectly good and unselfish, there may be trouble.

Let us consider details a little. A well organized medical school should have a professor of pathology and pathological anatomy, under whose direction a certain amount of laboratory instruction should be given — comparatively simple for the average student, extended and elaborate for post-graduates. The greater part of his teaching for the average undergraduate student must be by lectures, with demonstrations.

Given such a teacher, with the necessary facilities, why should the professor of surgery lecture on surgi-

¹ Paper read before the American Surgical Association at Washington, Wednesday, May 30, 1894.

cal pathology or bacteriology to the average undergraduate? The only really good reason I think of is, that he should be thoroughly familiar with the subject, and at times use experimental methods in devising improvements in surgical practice, and that teaching the subject greatly helps him to obtain, classify and retain his knowledge. But his teaching on this subject would be most valuable to a special class of advanced students, or post-graduates — who can devote themselves to it, and give the necessary time to that experimental work on animals which is absolutely essential to secure satisfactory results.

At all events, I think we can agree that the relations between the surgeon and the pathologist should be intimate and friendly, while each should be entirely independent of the other, and that the surgeon should go into details of practical application of principles in accordance with the more general teaching of the pathologist.

As regards the teaching of surgical anatomy, and of operations on the cadaver, by a teacher distinct from, and entirely independent of, the professor of anatomy on the one hand and the professor of surgery on the other, I believe that there are widely different opinions as to its expediency. Such an independent chair, or demonstratorship, is usually provided to make a place for some particular man, and its utility must depend upon who this man is.

While no general rule on this point can be laid down, might it not be best that attendance on such an independent course should be purely voluntary on the part of the class, and that it should be largely devoted to the instruction of those who wish to make a specialty of surgery? It appears to me that more use should be made of living animals than is now done, in teaching the results and treatment of wounds, including details of asepsis and antiseptics, and in special courses for advanced students who should be required to perform operations under the guidance of the surgeon.

The next question is as to the part which clinical surgery should play in a course of education leading to a medical degree. The great majority of students prefer clinical teaching and demonstrations to didactic lectures, and will go where this clinical teaching is most brilliant and varied; and, so far as it goes, we must admit that this kind of teaching is generally the most useful to them, because they remember it better. How far is it possible to cover the field of diagnosis and treatment of injuries and surgical diseases by clinical teaching alone to the extent that it is desirable for the average medical student? And how far is it desirable to vary and modify the didactic teaching so as to make it supplementary to the clinical teaching?

Evidently the answers to these questions must depend in part upon the amount and variety of clinical material that is available, and hence must differ for different schools. As a rule, clinical material is not available to cover the entire field for any school, no matter how large its hospital and dispensaries — hence there must be some systematic didactic teaching. Is it best that this should be a complete independent course covering the whole field, merely using for any particular subject such cases as may happen on that day to be available, thus leaving the greater part of the clinical teaching to duplicate that which has been given in the systematic course? This is, upon the whole, the easiest way, and in favor of it is urged that it is desirable that the student should be told the same thing

several times to ensure his remembering it. This is the argument which used to be used in favor of the old plan of not having a graded course but compelling the students to listen to the same course of lectures in successive years.

On the other hand, it can be seen that there would be certain advantages in deferring the systematic lectures until towards the end of the course, and then devoting them mainly to subjects which had not been illustrated in previous clinical teaching; but to make this plan a success it would be necessary that the systematic lecturer should either have given all the clinical instruction, or should be perfectly familiar with all that has been given.

A possible modification of this plan would be to let two professors divide the field of work, each taking a certain class of diseases and injuries, giving clinical instruction thereon and supplementing it with systematic teaching as above suggested, and then the two men exchanging fields of work each year. An objection to this is that a considerable part of clinical teaching is given in connection with patients who select their own surgeon, and who will not make such selection with reference to any curriculum. Undoubtedly the more clinical instruction of the right kind that can be given, the better for the students, and for the reputation and prosperity of the school.

But this phrase "clinical instruction of the right kind" brings up a new set of questions. How much does it profit the student to witness, from the rear benches of an amphitheatre, such operations as the ligation of arteries, the extirpation of tumors, lithotomy or nephrectomy? Undoubtedly the student is interested and learns something, and he will go where he can see — if not the operation itself, at least the heads of the persons who are busy about the patient; and it will not do to restrict his privileges much in this respect. At the same time, should not special opportunities be given to the few who are devoting themselves specially to surgery to see as much as possible of difficult and unusual operations? It appears to me that more than two hundred men cannot possibly obtain any special information from surgical clinics in an amphitheatre which they could not obtain equally well in a didactic lecture, and which could not be much better given with illustrations by means of lantern slides, than by using a patient as a means of demonstrating an operation. It is quite possible to show by means of lantern slides, as Dr. Kelly has proved, to several hundred men, every detail of an operation which can be seen by the immediate assistants of the operator.

Now with regard to clinical teaching to comparatively small sections, or ward classes, the members of which are to be brought as much as possible into contact with the patient, and even to assist in the operation of dressing. There is no doubt as to the utility and popularity of this mode of teaching, but in this connection a word may be said with regard to the relations of hospitals and dispensaries to surgical teaching.

While I believe that a hospital is not doing its fullest and best work if it is not increasing and diffusing knowledge, and that patients secure the best and most careful attention and treatment in teaching-hospitals, where the work of the staff is keenly scrutinized, yet it must be admitted that there is sometimes a danger that people will get the idea that in a teaching-hospital the interests of the patients are not as fully consulted

as they should be, and will avoid that hospital as much as possible. This danger arises mainly from two things: first, the allowing students to have anything to do with the treatment, and especially with an operation. The patient wants to be operated on by the most skilled man, that is, by the professor; and if he has a suspicion that after he is under the influence of an anæsthetic the professor may hand the knife to a student to make perhaps his first essay, he will avoid that place. All of us would do the same, and therefore in ward-class teaching a patient should never be deceived as to who is to perform the operation, for sooner or later the deception will be discovered and the news will spread.

The second danger to the popularity of a teaching-hospital is that patients are not unfrequently made to wait until their cases can be used for clinical instruction, sometimes for hours, sometimes for days. In most cases the patient knows when he is to be put off for this purpose, and after one experience of the kind he will go to another hospital the next time and advise his friends to do the same.

It is well also that the clinical surgical teacher should remember that his ability to obtain abundant clinical material depends to a very considerable extent upon the manners and on the good-will of some of his assistants, the resident physician, the nurses, etc., who are often the first to see the patient as an applicant, and who have much to do with subsequent treatment.

These assistants, residents, receiving-officers, case-takers and nurses, are not always possessed of the exquisite tact, kindly sympathy, and knowledge of human nature which it is to be presumed are invariably the characteristics of the clinical surgeon; and it is a part of his business to instruct them and perfect their manners as much as possible.

Recitations and quizzes are excellent methods of teaching for the majority of students, but are only well adapted to small classes or sections. At present they are, for the most part, conducted as a private enterprise by persons who may, or may not, be on the teaching staff. The question as to whether this mode of teaching should be made use of in the official course to a considerably greater extent than is now done is an interesting one and is commended for discussion. It appears to me more desirable that it should be applied to the clinical teaching than to the didactic lectures, and one good result of this would be to discourage the reliance on quiz compends, which I think invariably do more harm than good.

With regard to modes of lecturing, every man is, of course, a law unto himself; yet I will venture one or two suggestions. The teaching for a class of students should be definite, selective, and, to a considerable extent, dogmatic; and critical historical discussions should be used very sparingly.

What the student hears and sees during the first half-hour of a lecture is what he will remember best, and will have the best notes of; therefore, when there are several different ways of doing a thing, let the teacher describe first the method which he prefers, taking all the time required to fully demonstrate it and impress it on the student. After that is done the other methods may be referred to and so much history and criticism given as time will permit. If the reasoning is given before the conclusions are stated, the student is apt to get confused, and to characterize the teacher as a "wobbler."

If the lecturer will fix in his mind the half-dozen questions or so that he would ask to test the students' knowledge of the subject upon which he is going to speak, and will then make it his main object to answer those questions clearly, definitely and fully, he can hardly fail to give a good lecture.

In objecting to too much history in didactic or clinical lectures on surgery, I do not wish to be understood as underestimating the importance of giving historical instruction. I think that in every medical school a course of lectures on the history of medicine and surgery, combined with practical instruction in bibliographical methods, should be given; and if this is not done, then I would advise that the professor of surgery devote five or six lectures to the history and literature of his subject, which lectures will probably be most useful and interesting at the beginning of the last year of the student's course.

It was stated at the beginning of this paper that besides the average medical students, the needs of the man who wishes to specially fit himself to be a surgeon should be considered. These relate to post-graduate work mainly, for a broad foundation of medical knowledge is requisite for the man who wishes to become a surgeon. The technique of operative surgery, important as it is, is secondary in importance to skill in diagnosis, and to knowledge of therapeutical methods which do not involve the use of the knife.

The man who intends to be a surgeon should not only make a special study of surgical anatomy, but should do a considerable amount of practical laboratory work in bacteriology, pathological histology and experimental pathology and physiology.

It is quite true that the majority of our leading surgeons could not perhaps, by themselves, make a bacteriological diagnosis, or determine fine distinctions in new growths, and yet they do good work — having these points settled for them by younger men trained in the new methods. But the surgeon of the future should himself be trained in these methods, even though he may employ others to carry them out.

And in this connection I would remind you that bacteriology cannot be profitably studied for two or three days in a week, but that it needs at least three hours a day every day for three months for a man to learn how to begin readily to use its methods. In general, I think that all studies are best concentrated, and that the usual plan of dividing studies into an hour two days a week for this, and an hour three days a week for that, etc., is much more for the convenience of the professors than it is for the true interest of the students.

As for operating technique, much of it can be learned on animals, but much of it requires also work on the cadaver, the repetition over and over again, until, as Billroth said, a man could do it when he was asleep. The most important of all is residence in a hospital, the working as assistant to a surgeon, the seeing and handling cases, and not merely looking at them from a distance. The number of men who are able and willing to carry out such a course of study as that indicated is limited, and the teacher of surgery cannot do very much for them except give them opportunities for seeing his methods and results; but is it not possible to give them better opportunities than can be provided for a large class of undergraduates? Should they not be required to repeatedly perform the many operations which can be advantageously performed on animals

before they try these operations on man? It seems to me that in the last year of a four-years' course all students should be tested in this way; but it must be admitted that, with the present curriculum, there is not time to spare for this purpose, especially where the graduating class is a large one.

This leads to two final questions, which, though not directly connected with "the best methods of teaching surgery," have nevertheless, an important bearing on it. The first is: Are there not some subjects which occupy too much space in the undergraduate curriculum of our largest and best medical schools, such for example, as inorganic chemistry, and embryology? Ought not the student to be required to know so much as is required of inorganic chemistry before he begins his medical course? Is it desirable to make embryology and general morphology a part of the curriculum for all medical students, as a basis for the study of anatomy, or is it wiser to place these as elective studies in a post-graduate course, and to insist on more dissecting and a greater knowledge of practical anatomy than is now generally demanded? In this connection your attention is invited to the widely different opinions as to the best methods of anatomical teaching — as represented by Professor Macalister for the morphologists, and Mr. T. Cooke for the old school, which have appeared in the *Lancet* and in the *British Medical Journal* during the past year.

It appears to me that the teaching of anatomy should begin with a few lectures and demonstrations on general morphology, and that the first dissections should be made on cats and dogs until a good technique has been acquired, so that the supply of human cadavers, which is always insufficient, can be fully utilized to the best advantage. I also think that it is unwise to have the final examination in anatomy one or two years before the other final examinations; the anatomy should be kept up throughout.

My last question is: Would it not be good policy for a first-class popular medical school to limit the number of pupils which it will accept to its capacity to give them proper instruction in laboratory work, in practical anatomy, and in clinical medicine and surgery? Of course, each faculty is prepared to assert that its own school now does this, and will disapprove of fixing any limit to the number of its pupils; nevertheless, it appears to me, as an outsider, that there are at least two or three medical schools in this country which would act wisely if they would fix a limit to the number of students which they would receive either in the first or in the third year, or in both, and enforce this limit by competitive examination or by higher fees, or by both. It would bring the best men to them, and would enable them to do thoroughly good work.

A LAND WITHOUT A MICROBE. — The Spitzbergen group of islands, in the Arctic region, is said to be the most sterile place on the earth. Analysis of the air, water and soil of Spitzbergen shows an extraordinary poverty of these regions in bacteria. While the air of the streets of Paris contains on an average 51,000 bacteria, that of the Arctic Sea contains only three per cubic metre. The water of Spitzbergen not only is devoid of any pathogenic micro-organisms whatever, but is also entirely free from all kinds of bacilli.

CRYSTALLINE DEPOSITS IN THE URINE: THEIR CAUSATION AND RELATION TO RENAL DISEASES.¹

BY EDWARD M. GREENE, A.M., M.D.

THE object of this paper is to consider the conditions under which crystalline deposits are formed within the urinary tract, the injurious effects of these crystals on the kidneys, and the treatment. We will limit our inquiry to uric acid and calcic oxalate, which are by far the most frequent and important of the inorganic crystalline substances found in the urine.

Uric Acid. — This is present in normal urine and has also been found in the blood as well as in the liver and spleen, and, to a less extent, in the brain, pancreas and muscles. The amount excreted daily depends greatly upon the diet, varying from half a gramme on a vegetable diet to as high as even two grammes on an animal diet. It occurs only in traces in the urine of herbivora, and may be absent in that of carnivora. On the other hand, in the urine of birds and reptiles it is the chief nitrogenous ingredient. In various diseases the quantity in the urine is increased, and, at times, as in gout, uric acid accumulates in the blood and is deposited in the tissues. It is generally conceded that uric acid is formed in the tissues, and merely excreted by the kidneys. Experimental evidence points to the liver as the place of formation of uric acid, and it is probably formed by the synthesis of ammonia and lactic acid. Ebstein, however, thinks it is chiefly produced in the muscles and bone marrow.

Uric acid may be described as a less oxidized product of proteid metabolism than urea; but there is no evidence to show that the former is a necessary antecedent of the latter. On the contrary, all the facts known go to show that uric acid is produced by a somewhat different process of metabolism from that which results in urea formation. As pointed out by Foster, "We have no evidence to prove that the cause of this divergence lies in an insufficient supply of oxygen to the organism at large. On the contrary, uric acid occurs in the rapidly breathing birds, as well as in the more torpid reptiles." "Urea is the form adapted to a fluid, and uric acid to a more solid excrement."

Uric acid is extremely insoluble in water, one part of uric acid requiring about 15,000 parts of cold water and 18,000 parts of boiling water. It is insoluble in all dilute acids. It dissolves freely in weak solutions of the carbonates of lithia, potash and soda and in common phosphates of soda. The amount of uric acid capable of being held in solution in the blood depends on the degree of its alkalinity.

Calcic Oxalate. — Although widely distributed throughout the vegetable kingdom, oxalic acid occurs only in very slight amount in the animal organism, and then always in combination with calcium. Calcic oxalate is insoluble in water, ammonia and acetic acid. It is readily dissolved by mineral acids, and to a less extent by solutions of sodic phosphate or urate; chloride of sodium, sulphate of sodium, chloride of potassium, and even urea, aid in its solution, though in slight degree. It occurs in urine both in solution and in the form of octahedral crystals and dumb-bells. Neubauer has frequently found tolerable amounts of calcic oxalate in solution in the urine when no trace of

¹ Read before the Boston Society for Medical Observation, March 5, 1894.

It was discovered in the sediment; but he has also frequently tested normal urine for calcic oxalate with a negative result, so that it is doubtful whether this substance is to be reckoned among the normal or abnormal constituents of human urine.

The calcic oxalate found in urine is derived from two sources: (1) Articles of diet and drugs; (2) As a secondary product of the decomposition of animal, mineral, or vegetable substances.

The first class is composed principally of sorrel, rhubarb, tomatoes, oxalic acid when used medicinally, gentian, saponaria, etc.

The second source is illustrated by the formation of oxalic acid from the oxidation of uric acid, kreatin, leucin, etc., and from the imperfect oxidation of sugar, starch and salts of the vegetable acids, whereby these, instead of being wholly transformed into carbonates, become in part oxalates which contain less oxygen. It is, moreover, probable that oxalates may be formed from carbonates and bi-carbonates when a part of their oxygen is removed from them by a process of reduction. These facts in a measure explain why oxalic acid may be found in the human system under favorable circumstances; thus after taking carbonated drinks, as champagne and seltzer water, in disturbances of respiration where the supply of oxygen is diminished, and after eating sugar in excessive amount, although the special conditions under which this formation takes place are still undiscovered. [Neubauer.]

Oxalic acid, though insoluble in water, is kept in solution in the blood and enabled to pass through the walls of the blood-vessels in the kidney, and thus appear in the urine, through the solvent action of sodium phosphate, and, to a less degree, by that of chloride and sulphate of sodium and even of urea.

It is thus seen that uric acid and calcic oxalate result from defective processes of metabolism, and affect the kidney only by throwing upon it the labor of their excretion and by the formation of crystalline precipitates in the renal tubules and pelvis of the kidney.

It is extremely important to determine the conditions under which these substances crystallize in the urine, and to study the effect of their prolonged action on the kidneys. For this purpose I have tabulated the records of 600 analyses of urine made by me during several years past, in all of which careful microscopical examinations of the sediment were made. No hospital or dispensary examinations are included, as these were not all made with equal thoroughness. In many of these cases the urine was normal, although there usually were symptoms which suggested the advisability of an examination. In very few cases included in these records were there more than one or two specimens from the same patient.

Of the total number of 600 examinations

A crystalline sediment was present	180 times or 30 %
Uric-acid crystals were found	102 " 17
Calcic-oxalate crystals were found	108 " 18
Both calcic-oxalate and uric-acid crystals were found	30 " 5

In all the cases containing these crystalline sediments the reaction was acid in every case and usually strongly so.

Of 72 times in which uric acid alone was found,

Crystals were present in large amount	30 times
Albumen was present	45 "
Casts were present	36 "
Blood was present	20 "
Sugar was present	6 "

Of 78 times in which calcic oxalate alone was found,

Crystals were present in large amount	53 times
Albumen was present	44 "
Casts were present	38 "
Blood was present	16 "
Sugar was present	0 "

Of the 80 cases in which both calcic oxalate and uric acid were present,

Albumen was found	18 times
Casts were found	15 "
Blood was found	8 "

The specific gravity of 30 specimens containing much uric acid was

Below 1,015 in	6 cases
From 1,015 to 1,019 in	5 "
From 1,020 to 1,024 in	5 "
From 1,025 to 1,029 in	12 "
Above 1,030 in	2 "

Or, in other words, it was below 1,020 in 11 cases, and at or above 1,020 in 19 cases.

Of 53 cases in which calcic oxalate was present in large amounts the specific gravity was

Below 1,020 in	6 cases
From 1,020 to 1,025 in	19 "
Above 1,025 in	28 "

To summarize, then, a crystalline deposit was found in nearly one third of all the examinations which were made. Calcic oxalate and uric acid were found with very nearly equal frequency, each being present in about 18 per cent. of the examinations, although large amounts of calcic oxalate were twice as frequent as large amounts of uric acid.

Albumen was present in nearly two-thirds of all the cases containing a crystalline deposit, and was equally frequent with both kinds of crystals. In a little more than half the cases it was present only as a very slight trace; and in the others it very seldom exceeded one-eighth per cent.

The nitric-acid test, and boiling with a drop or two of acetic acid, were the only tests used for albumen; and the latter proved the more delicate. By a "very slight trace" is meant the smallest amount of albumen which caused very slight but distinct cloudiness when boiled.

Casts, usually of the hyaline or finely granular variety, were present in 89 of the 105 cases in which albumen was found, and were also present in four cases in which no albumen was detected. Usually the number of casts is small and they are associated with mucoid threads.

Blood was found in more than a fourth of the cases of uric acid, and in about a fifth of the cases of calcic oxalate. In only four cases was it present in sufficient amount to be suspected by its appearance to the naked eye. In all other cases a few or a moderate number of blood globules were found by the microscope alone.

Sugar was present in one-twelfth of the uric-acid cases, but was never found with calcic oxalate.

Acidity was almost always marked with uric acid, but less so with calcic oxalate.

Specific gravity was above 1,020 in two-thirds of the uric-acid cases, and in nearly nine-tenths of the calcic-oxalate cases.

The diagnosis of chronic parenchymatous or interstitial nephritis could not be made in more than 18 of the 105 cases in which albumen and crystals were present.

We may then fairly infer that the remaining 87 cases illustrate the considerable amount of irritation of

the kidneys produced by urine containing crystalline deposits.

In the entire number of 600 examinations, albumen was found 340 times from all causes.

Comparing this number with that of the cases of albuminuria due to crystalline irritation (87), we find that the latter cause accounted for nearly one-fourth of all the cases of albuminuria.

It is well known that both uric acid and calcic oxalate may be precipitated from the urine after it has been voided. All acid urines invariably deposit uric acid sooner or later. In perfect health the acid held in solution, by its combination with alkaline bases, does not deposit its uric acid, even after it has been voided, unless it stands for a considerable time. The precipitation of uric acid is caused by the acid fermentation of the urine, during which the extractive coloring-matter is decomposed with the formation of free lactic and acetic acids. Uric acid thus precipitated twelve to twenty hours after emission has no pathological significance. The crystals which separate in this manner are usually larger than those which are found in the urinary tract, and many of them will be found adhering to fibres of cotton or other foreign substances. The bulk of the uric-acid crystals is also found on the top of the natural sediment or adherent to the sides of the vessel. Crystals of calcic oxalate also may form slowly in the urine after it has been voided owing to the chemical decomposition of the acid sodium phosphate, which is the principal substance holding the calcic oxalate in solution. Such crystals are generally larger than those which are formed within the body. Indeed, the latter are often so minute that they appear hardly larger than bright points even under a powerful microscope. In case of doubt the presence of a slight trace of albumen, and especially of blood globules, would point to the formation of these crystals in the kidney or bladder.

The amount of crystalline uric-acid sediment cannot be taken as an index of the actual amount of uric acid excreted. On the contrary, Roberts frequently found that those days on which a spontaneous deposit occurred, showed less uric acid than those days on which no uric acid was spontaneously deposited. The amount of uric acid actually excreted presents considerable variations in the same individual from day to day.

The quantitative estimation of uric acid is a difficult matter and is of slight importance as uric acid in solution is comparatively harmless. Though urea may be decomposed into uric acid, both by artificial means in the laboratory and within the human body, exact observations have failed to show that there is any inverse correspondence between the excretion of the two substances; usually urea and uric acid increase and decrease together.

The conditions of the urine which cause precipitates of uric acid are stated by Roberts to be as follows: (1) high acidity, (2) poverty in mineral salts, (3) low pigmentation, (4) high percentage of uric acid.

The degree of acidity is probably the most important element.

Clinically the excretion of uric acid is markedly increased in the febrile state, in certain diseases of the liver, in tuberculosis, rickets, scurvy, leukæmia, and after an attack of gout. It is diminished during the paroxysm of gout. I have found a very large amount of uric-acid crystals in the urine of a rather delicate boy, six years old, whose father and grandfather both

had chronic, gouty joint-inflammations. Such a case illustrates the importance of hereditary influences. In the production of uric acid, especially, habits of luxurious eating and drinking combined with deficient muscular exercise are important factors.

Von Jaksch found uric acid present in the blood in all those disease processes in which oxidation was disturbed, either directly, as in affections of the lungs, such as pneumonia, or indirectly, as in anæmia, in which the oxygen-carriers are deficient.

In view of these practical observations, as to the relation of oxygen to uric-acid production, the theoretical inferences drawn by Foster (quoted above) from the formation of uric acid in birds are found not to apply to man. According to Haig, the amount in the blood rises and falls with the degree of alkalinity, as uric acid is soluble in alkalies, and all circumstances which increase the alkalinity are associated with an increase in the amount of uric acid in the circulation.

The conditions favoring calcic-oxalate formation seem to be somewhat different from those concerned in uric-acid formation. In the latter, we are more likely to find that the system is overloaded with nitrogenous material the oxidation of which is hindered by a deficient supply of oxygen. In other words, the organs concerned in the process of assimilation and oxidation are overcome by the excessive work imposed upon them. The formation of calcic oxalate depends rather upon a disturbance of function in these organs, so that we find that oxaluria is associated with dyspeptic and neurasthenic conditions in which the vital processes are at a low ebb. This opinion is somewhat strengthened by the result of examinations which I made of urine of fifty different patients, taken at random, at the McLean Asylum. Crystalline deposits were found in 28 cases—nearly one-half of the patients examined. Calcic oxalate was almost twice as frequent as uric acid. Albumen was found with the crystals 13 times; blood was found with the crystals 11 times; casts were found with the crystals 12 times. The specific gravity was over 1,020 in 16 of the 28 cases; and it was over 1,025 in 13, reaching 1,033, 1,040, 1,040 and 1,041 in 4 cases, without the presence of sugar.

Comparing these results with those previously given, we see that a crystalline deposit, especially of calcic oxalate, is much more common in the insane than in other patients. The latter generally took very little exercise, ate as little as possible, and often suffered with melancholia or nervous prostration—in short, were in a poor physical and mental condition.

The question then arises whether "lithuria," and "oxaluria" are themselves diseases, as some hold, or only symptoms of many diseased conditions. Many writers have described an "oxalic-acid diathesis" which is accompanied by all the symptoms met with in dyspepsia, hypochondriasis and neurasthenia, and corresponds with the condition attributed by some to spermatorrhæa. But all of these symptoms may be present without oxalate of lime; and, on the other hand, a large amount of oxalate of lime may be found apart from any of the above-mentioned symptoms.

We are forced to conclude, therefore, that the term "oxaluria" must be restricted to the narrow definition of the occurrence of a deposit of calcic oxalate in the urine. "Lithuria," likewise, simply implies a deposit of urates or uric acid. In this narrow sense the symptoms produced by deposits of uric acid or of calcic

alate are simply those of varying degrees of irritation of the kidneys and urinary tract.

A distinction should be made between slight, occasional deposits and large quantities occurring persistently. Almost every one has probably had at some time or another a few crystals in the urine, and these without particular significance. But where there frequently a considerable deposit an abnormal state must be recognized, and one which calls for treatment. The most obvious danger is the liability to the formation of calculus.

More insidious and harmful is the condition of long-continued hyperæmia of the kidney, due to irritation, which may end in chronic interstitial nephritis, the so-called "gouty kidney." In his description of the contracted kidney, Strümpell says: "In the pelvis of the kidney, which is often somewhat dilated, there are frequently a number of uric-acid concretions. Striated uric-acid infarctions in the pyramids are a very characteristic mark of the gouty, contracted kidney." He also says that "experience teaches us that there are three chemical substances which may favor the development of contracted kidney: alcohol, lead and uric acid. Chronic alcoholism is often to be regarded as the most probable cause of renal contraction, especially in people who have 'lived well' otherwise, and have become corpulent."

This latter condition is what we have just shown to be the most important factor in uric-acid formation, and it is not impossible that alcohol produces its harmful effect on the kidney partly through its influence in favoring the production of uric acid. Chronic lead-poisoning and gout, Strümpell also says, "often lead to the development of contracted kidney, in which we probably have to do with the noxious action of an abnormal amount of uric acid on the renal parenchyma." "Intense worry and strain of business" are causes assigned by Osler and others. These conditions also we have shown to be productive of calcic oxalate and uric acid by disordering the digestive and metabolic processes generally.

Professors Da Costa and Edward S. Wood, in recent papers, speak of the frequency with which albuminuria is produced by renal irritation caused by urine which is concentrated and contains uric acid or calcic oxalate. It is to this cause also, in many cases, that Professor Wood attributes the so-called albuminuria of adolescence.

The occurrence of albumen in these cases is often intermittent, and I have found that it is much more likely to be present in the early morning urine, as this is more likely to become concentrated and to contain crystals, owing to the necessary abstinence from food and drink during the sleeping hours.

In organic nephritis, on the other hand, albumen is much more abundant after the ingestion of food, the damaged condition of the renal capillaries allowing the albumen thus supplied to go directly into the urine.

This point is illustrated by the case of a young man who came to my office one morning last April to be examined for life-insurance.

He was twenty-three years of age, a clerk in a business office, well developed and apparently in very good health. He said he felt perfectly well in every way, and there was no prejudicial family history. On examining the urine, I was surprised to find one-tenth per cent. of albumen. The urine was highly-colored, specific gravity of 1,022, acid, without sugar, and con-

tained a considerable sediment. The latter, on settling, showed under the microscope much calcic oxalate, a little mucus and a few hyaline casts. A few days later he came in in the afternoon and brought a specimen of urine passed before breakfast, which proved, on analysis, to be the same in every respect as the above, except that there was not quite so much albumen and very little calcic oxalate. The specimen passed in my office the same afternoon was of normal color, specific gravity 1,020. No albumen, sediment slight, and found to contain nothing abnormal.

On June 22d, after he had been taking water and diuretics, a morning specimen showed a specific gravity of 1,010, no albumen, and a slight sediment which contained nothing abnormal. After this he neglected treatment, and I did not see him again until October 14th. On that day the early morning urine was high-colored, specific gravity 1,022, albumen one-tenth per cent., sediment slight, but contained a little calcic oxalate, a little mucus and a few hyaline casts. The afternoon specimen of the same day had a specific gravity of 1,012, contained no albumen, and I was unable to find either calcic oxalate or casts in the urine. He informed me that a few days previously he had been accepted for life insurance by another company, although he had informed them that he had been rejected by me in April for albuminuria. The medical examiner had had him call at his office several days in succession, and had found no albumen. On inquiry, I found that his calls had always been in the afternoon, and he was required, as is customary, to pass his water in the presence of the examiner, who became satisfied that the urine was normal. It would seem advisable in such cases with a high specific gravity for the medical examiner to contrive to secure a reliable specimen of early morning urine. I have seen the patient several times since, and usually find albumen and calcic oxalate in the morning urine. The only cause for this condition that I could discover was a habit of drinking very little water, and a disinclination to take any more exercise than he was obliged to take in walking to and from the office.

(To be continued.)

CASES OF ACUTE PNEUMONIA IN CHILDREN.

BY F. GORDON MORRILL, M.D.

THE tables given in this paper include a great majority of the cases of pneumonia which have been treated in the wards of the Children's Hospital, the exceptions being a few of which the records are not sufficiently complete to be useful.

The period of life (second to twelfth years inclusive) during which children are eligible for admission to the hospital must be borne in mind, as it undoubtedly influences the views which experience in this particular institution might lead one to adopt.

By "frank" pneumonia is meant a form of the disease which has been easily diagnosed from the far more serious broncho-pneumonia, and which (so far as our experience at the Boston Children's Hospital is concerned) differs from it as radically as any two acute diseases affecting the same organs can differ in their history, course and prognosis.

The term "frank" instead of "croupous" or "fibrinous" pneumonia, is employed in order to avoid the confusion which has arisen since the comparatively

recent discovery of the fact that there may be considerable quantities of fibrin in cases which are clinically, and (as recently proved) in their bacteriological pathology, broncho-pneumonia. The statement made that both forms and all grades of the disease may coexist in children is not warranted by our present knowledge, and has proved a most unwelcome addition to already existing perplexities.

That a frank pneumonia may terminate by prolonged lysis, that a bronchitis often accompanies it, or that a broncho-pneumonia may involve the whole (?) or nearly the whole of an entire lobe, are facts which when properly weighed do not invalidate the statement in the preceding paragraph.

Cases of prolonged absorption of the products of a frank pneumonia are by no means rare in adult life, and the same thing is occasionally observed during childhood. Cold is assuredly a factor in the causation of frank pneumonia; and a bronchitis giving rise to râles in any or all portions of the lungs may be naturally expected in 15 to 20 per cent of all cases. When a large portion of lung is involved by a broncho-pneumonia the history and predominant symptoms of the case have usually been such as to enable the attending physician to form an early and correct diagnosis.

The very small number of autopsies which have been obtained does not warrant the expression of an opinion concerning the post-mortem appearances of either form of the disease.

Clinically, the children who have been treated in this hospital, have taken their pneumonias almost "straight."

SUMMARY.

Mortality about $1\frac{1}{2}$ per cent. in 72 cases, of which 44 were boys, and 28 were girls.

Average age a little over five years.

Months when admitted: January, 4; February, 6; March, 6; April, 9; May, 7; June, 9; July, 2; August, 4; September, 5; October, 7; November, 3; December, 10. Spring and winter, 42 cases; summer and autumn, 30.

Highest temperature in any case while under observation 106.5° F. Lowest maximum temperature in any case while under observation 101° F. Highest average maximum temperature in 68 cases 104.2° F.

Terminating by crisis (the temperature dropping to normal or below within twenty-four hours) 34. Terminating in "short lysis" (temperature dropping to normal or below in more than twenty-four and less than forty-eight hours) 19. By prolonged lysis 12.

The average critical day in 54 cases was the eighth. In 31 of the cases terminating by crisis it was between the seventh and eighth. The lower lobes have been more frequently involved than any other portions of the lungs. In three cases the location of the disease was central — by which is meant that no signs of solidification could be detected, but the symptoms were sufficiently well marked to make it morally certain that the disease was frank pneumonia. Such cases as terminated in prolonged lysis, showed the physical signs of very slow absorption of inflammatory products with little or no redux crepitation. Pleuritic effusions in connection with frank pneumonia have been rare, and as a rule of small extent. But one case of empyema has been observed.

The disease certainly appears to be very benign so

far as concerns the cases here reported, and the treatment has been quite simple: milk diet; brandy, when indicated; digitalis or strophanthus in cases of irregular or very weak pulse; and occasionally phenacetin, in instances when a high temperature has not been well borne. Pretty free stimulation (two or three ounces of brandy per diem) has been used when a sudden fall of temperature was followed by signs of collapse. No cough mixtures of an expectorant character have been employed; but occasionally an opiate has been given to check troublesome night-cough.

The expectoration of rusty sputa has been exceedingly rare, and the main points upon which the differential diagnosis has been made are: sudden onset of the attack (history of cough accompanied by high fever, nausea, convulsions or delirium, and abdominal pain), the quiet type of the dyspnoea and detection of solidification giving rise to coarse (as a rule) crepitant râles, bronchial respiration and exaggerated vocal resonance.

The average age of the children admitted for frank pneumonia, five years ten months, as compared with the age of those entering with broncho-pneumonia (a little over three years) would seem to show pretty conclusively that in New England the latter disease is most prevalent among children who are of an age to easily shed and rapidly proliferate the epithelium of their mucous membranes.

The following table includes the cases of broncho-pneumonia which have been treated in the wards with the exception of five cases, in which the records are very incomplete. The total number of cases (33) when compared with the number of frank pneumonias (72) goes to prove which is the most common type of the disease between the second and twelfth years.

This hospital is a poor field for the observation of broncho pneumonia, which is essentially a disease of very young children and infants, and is apt to break out in epidemic form in institutions where large numbers of them are congregated. This epidemic type is infectious, and is characterized by its sudden onset. It is this form of the disease (particularly in cases where a large extent of lung is involved) which has given rise to conflicting views of both clinicians and pathologists. The children treated in this institution are of an age which usually exempts from this fatal form of broncho-pneumonia, and the non-admission of measles affords further protection. Many of the cases reported here might be more properly called chronic broncho-pneumonia, or phthisis following closely after the acute form of the disease. Cases in which an acute broncho-pneumonia is merely the death mask of a miliary tuberculosis are usually of an explosive type, and prove rapidly fatal. So far as I am aware, we have had but one example of this form of the disease in the hospital, and the diagnosis in this case was made at the autopsy.

A brief summary of the table shows that 14 of the cases were girls and 19 boys: and the average duration of illness from its commencement (as nearly as could be ascertained) in 29 cases has been between 10 and 12 weeks. There are so many types of the disease, varying from that which suddenly overwhelms a child (as in the epidemic and very infectious kind, such as occurs among children who are crowded together) to the long sickness which eventually kills by subacute or perhaps fibroid phthisis, that I think it quite impossible to fix any definite average of duration of cases which custom has sanctioned our calling

FRANK PNEUMONIAS.

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¹ The Practitioner, 1893.

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recent discovery of the fact that there may be considerable quantities of pyogenic organisms in the blood and (as recently proved) broncho-pneumonia in both forms and all children is not without exception and has proved an existing perplexity.

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"broncho-pneumonia." A very acute attack may prove to be merely the wind-up of a miliary tuberculosis; it may kill in a very few days without the aid of tubercle, or the child may recover quite speedily. On the other hand, a similar attack may be followed by a slow form of pulmonary phthisis; and the period of death, or possibly recovery, is quite indefinite. A mortality of 45 per cent. as in the cases here given, is perhaps what might be naturally looked for in the type of the disease which they represent.

I have been unable to discover in the records any case of so-called "capillary bronchitis," for the reason that when children have presented the symptoms usually attributed to this disease (as they have in one or two instances) they have been treated for, and recovered or died of, *broncho-pneumonia*.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

THE UNTOWARD EFFECTS OF ANTIPIRYN, ACETANILIDE AND PHENACETIN.

DR. D. R. PATTERSON¹ states that circulars were sent out to the South Wales Branch of the British Medical Association asking for information as to the alleged ill effects following the administration of antipyrin, acetanilide and phenacetin, the nature and comparative frequency of their occurrence, and their relative importance. Twenty-five replies were received; and these were from men engaged in active practice, in some instances both hospital and private, and residing in different parts of the district. The writer also discussed the subject with many of the members who sent in reports, and thus learned their views at greater length than could be expressed in a circular reply.

Antipyrin. — It is as an analgesic that this drug is prescribed so largely by practitioners, and all are agreed that it is an invaluable remedy. Large doses depress the nervous system. Of the twenty-five reports, seventeen note positive results, varying from an unpleasant diaphoresis to severe collapse. Most of them may be referred to the action on the nervous system, producing exhaustion and collapse following the fall of temperature; and there may be disturbance of the circulation for the same reason or secondarily from the effect on the blood-corpuscles and the production of methæmoglobinæmia. Other symptoms, such as affections of the skin and pronounced psychical disturbance, are more rare. Depression with collapse has usually been noticed after doses given with a view to reduce fever. Thus, a dose of twenty grains was followed in a male adult in a short time by great collapse and fall of temperature, requiring hypodermic injections of ether and digitalis to tide the patient over the difficulty. The writer cites another case in which ten grains given to a lady convalescent from influenza led to extreme depression and collapse; the patient became deeply cyanosed, unconscious and pulseless, and required free stimulation before she was considered out of danger twelve hours later. A small proportion of results such

as these have been observed in children, where regulation of the dose is not so exactly carried out, although the amount borne by a child is often relatively much larger.

Several of the reports call attention to the frequency of depression in pneumonia, and express the opinion that the use of the drug should be very guarded in that disease, one member holding that it is positively harmful even in small amounts. Falk, in his *résumé* of the ill effects of recently introduced antipyretics, mentioned a case of pneumonia where death occurred one hour after the administration of antipyrin, which was regarded as the cause of the fatal result. The stage of collapse is not infrequently ushered in by a feeling of anxiety and great prostration, and the symptoms are sometimes relieved by vomiting. The intensity of depression that may follow even a moderate quantity of antipyrin is illustrated by a case, recorded by the late Paul Guttman, which was sent into the hospital as one of cholera. The patient, a well-developed man, had the symptoms and appearance of the asphyxial stage of cholera-morbus, except that the bowels were confined. On the chest and abdomen was a dull-red miliary rash. Five days previous to his admission, he had taken for headache a fifteen-grain powder of antipyrin twice a day, in all 150 grains, when he fell into this condition. Under stimulating treatment he recovered rapidly. Minor degrees of depression are represented by unpleasant diaphoresis, which may be so profuse as to prostrate the patient temporarily. Continued use of even small doses leads not infrequently to a condition in which the patient complains of loss of energy, is disinclined to exert himself and becomes depressed mentally, in short, there is established an antipyrin habit. Falk mentions headache, giddiness and other nervous symptoms as occasionally brought on by antipyrin.

One of the members report blurring of the vision along with blueness of the lips and finger-nails. Blueness of the lips and face is one of the commonest untoward effects, and was noticed in various degrees, from that which is just perceptible, to a deep cyanosis associated with profound collapse. It is to be explained by the action on the nervous system, and especially the blood by which methæmoglobinæmia is produced. In extreme doses the red cells are destroyed. The circulation of the altered blood through the medullary centres is responsible for many of the symptoms observed.

Several of the reports note cardiac depression. Cardiac failure in cases of pneumonia was frequent even with doses of ten grains. None of the members have apparently had any experience of the occurrence of hæmorrhages reported by Continental writers. Such an occurrence points to the necessity of great caution in the administration of antipyrin in phthisis and typhoid fever. In the former, the rather profuse perspiration produced by the drug is a serious drawback. Two of the reports mention the appearance of a rash after the use of antipyrin. The writers of these reports did not observe various symptoms observed by others, such as convulsions, rise of temperature instead of the anticipated fall, etc.

As to the frequency with which the ill effects are met, all the members agreed that they were very rare. Shortly after the introduction of the drug they were not uncommon, on account, no doubt, of the larger doses then in use. The reports of those who have not

¹ The Practitioner, 1893.

observed any unpleasant after-effects or signs of intoxication show that the doses they were in the habit of giving were, on the whole, smaller. A single dose of ten grains or five grains every three hours is the usual practice of three out of eight who report negative results; others give two ten-grain doses, with an interval of two or three hours between. Two members state that when giving antipyrin as an antipyretic, they always combine it with a stimulant, such as sal volatile, brandy, or tincture of digitalis. In this way large doses, even to the extent of twenty grains every four hours, until 120 grains had been reached, were administered without depression being felt.

Acetanilide (antifebrin).—Its action in lowering temperature is striking, but the disadvantages attending it have seriously limited its administration. The frequent occurrence of symptoms of intoxication, and the alarming appearance they sometimes assume, led many practitioners to abandon its use very early. Eight members report results after a considerable use of the drug; and among them a few speak of its great value when used with due care. The dose generally given varies between five and ten grains, but some give as low as three grains to an adult. The general experience seems to be that the larger doses are soon followed by symptoms of intoxication. Some practitioners combine the drug with a stimulant—brandy, or digitalis, or caffeine—with excellent results. The consensus of opinion gathered from the reports coincides with that generally expressed, that symptoms of depression and collapse are more readily produced and more marked than with antipyrin; and this may be explained by the fall of temperature being greater and more rapid. One observer, whose extensive use of acetanilide makes his opinion very valuable, states that there is less collapse in children than with antipyrin. In pneumonia, the depressant action on the heart renders it very unsafe. Most of the reports mention cyanosis, and to a greater degree than after antipyrin. Anæmia may be induced by the continued use of the drug, and become a grave condition. The anæmia is due to the action of acetanilide on the red blood-cells; minor forms of it are noticed after a few doses.

Phenacetin.—This drug is more free from ill effects than either of the other two drugs. It is generally given in doses varying from five to ten grains, and it is very useful in neuralgia of the fifth nerve, sick-headache, etc. Its depressant action on the nervous system and heart is manifest only when very large doses are given, small amounts taken frequently being borne without ill effects. It is not, however, absolutely free from unpleasant consequences, as is illustrated by a case of Eisenhart. An adult male was given for pain in connection with a carious tooth three powders, each containing fifteen grains of phenacetin, within three and a half hours; half an hour after the last powder palpitation and oppression of breathing came on; later, the palpitation and oppression increased, dulness of hearing came on, and then nausea and vomiting. With the onset of sickness, all traces of intoxication vanished, and the patient felt well. Skin eruptions, chiefly urticarious, are said to follow the use of phenacetin.

[It is not alone the immediate depression which may follow one or two doses of these drugs against which we should guard, but rather the more insidious depression which may follow their continued use in a long illness like typhoid fever but which may not be-

come apparent until the later stages of the disease. It is a good rule to avoid these drugs in serious illnesses where we need to husband the patient's strength. Acetanilide (antifebrin) is the most likely of the three to have an untoward action. — F. H. W.]

STRONG HYDROGEN PEROXIDE ACID SOLUTIONS LOCALLY IN DIPHTHERIA.

Dr. Francis H. Williams,² in an article on diphtheria, outlines in a few words the general treatment of this disease, speaking of the need of special attention to the food of the patient and of the service of alcohol in some cases, and adds that the cases of Behring treated with the blood-serum of immune animals, encourage us to hope that a feasible internal remedy may yet be found. He then goes on to say that at present local remedies are our best means for the treatment of diphtheria, and obviously they are best adapted to those cases that are seen early, before much of the poison has been absorbed, and in which the membrane is accessible. He then briefly touches upon various of the local remedies that have been used, but does not recommend any of them, citing three cases, the diagnosis of which was based on cultures, to show how the membrane may persist under the use of corrosive sublimate. Two of these cases entered the hospital on the third day of the disease and were treated with corrosive sublimate (1 to 10,000) in the one case, and with corrosive sublimate aided by the ordinary solution (7.5 volumes) of hydrogen peroxide in the other. In the first case, the patient was finally discharged on the one-hundredth day of the disease. The corrosive sublimate seemed to have inhibited the growth of the bacilli so that for a time none appeared in the cultures and treatment was therefore stopped; they were, however, apparent later. In the second case, the patient was discharged on the forty-first day of the disease. Both of these patients had weak hearts, and the latter had paralysis. The writer then discusses more in detail the special local treatment which he has found to be most efficient, namely, strong hydrogen peroxide acid solutions, by which he means strength of 25 to 50 volumes (old style 50 to 100); 7.5 volume solutions are weak germicides. He first proved, by experiments made in the laboratory, that the strong acid solutions were efficient germicides against the Klebs-Löffler bacillus; he lays stress upon the important part played by the acid contained in them, and shows that the hydrogen peroxide has the special quality of breaking up and disintegrating certain portions of the diphtheritic membrane without injury to the healthy tissue, thus rendering the bacilli more accessible. In stating his clinical experience, he describes two cases of diphtheria, the diagnosis of which was based on cultures where, although only partial use of the strong hydrogen peroxide solutions was made, good results followed. These two patients entered the hospital on the second day of the disease; in the first case, a final application of the peroxide was made on the fifth day after entrance and the patient left the contagious ward six days later. In the second case, a final application of the peroxide was made on the third day after entrance, on the fourth the throat was clear, and the patient was discharged after being kept under observation ten days longer. In neither case was there cardiac weakness, depression or paralysis.

The writer states that he has found nothing that

² American Journal of Medical Sciences, November, 1893.

will remove the membrane due to the diphtheria bacilli so well as the strong solutions of hydrogen peroxide, gives a general rule for using them, describes the instruments with which they should be applied, and then says that any local treatment must be frequently applied to be efficient, as the bacilli reproduce themselves in a very short period. The use of the strong hydrogen peroxide acid solutions reduces the number of applications to a minimum, as the more thoroughly the membrane is disintegrated and removed the less frequent is the necessity for treatment, and the shorter its duration. The usefulness of good local treatment is in direct ratio to the stage of the disease, the accessibility of the membrane, the age and strength of the patient, and the ability of the practitioner to apply it with the least tax on the patient's strength combined with the greatest destruction of the bacilli. The writer emphasizes the importance of early treatment, and says that the strong hydrogen peroxide acid solutions are the most efficient local treatment of which he knows.

[Further use of these solutions in cases of diphtheria, the diagnosis of which was based on cultures, shows good results, especially in those cases treated early. Over 90 per cent. of those which were treated within the first three days recovered.]

THE OBTAINING AND THE USE OF SERUM FOR THE CURE OF DIPHTHERIA.

Ehrlich, Kassell and Wassermann² in a very interesting paper state that the animals principally used to furnish serum in their experiments were goats, which they found especially adapted to the purpose. The manner of rendering them immune is alluded to and the method of testing the power of the antidote described. By an agreement with Behring the best of the serum made by them was used in several hospitals and the whole number of cases treated was 220, all of which were children. The cases were not selected. These injections of serum confirmed earlier observations in proving them to be perfectly harmless. At first, one injection only was used, but experience gained in the treatment of severe cases induced them later to use repeated injections in certain hospitals. Of the 220 cases treated, 168 recovered and 52 died; 67 of the 220 cases had tracheotomy performed; of these 37 recovered. A table given shows that the success of the treatment by serum depends essentially upon how early in the disease treatment is begun.

The writers noticed that the temperature and pulse were influenced only by the stronger injections. An immediate fall in temperature does not customarily follow the injections of serum, and this may be due to the fact that the pure Klebs-Löffler bacillus was only found in the very early stages of the disease in these cases, and even then it was proportionately rare. In the later days of the disease other bacteria were associated with the diphtheria bacilli, and the antidote for the poison of this bacillus does not counteract that of the other organisms. In some cases where the treatment was begun very early, the writers noticed an almost critical lowering of the temperature and of the very high pulse. They close by saying that the fate of the child is decided in the first three days of the disease and therefore the serum should be injected as early as possible; that according to their experience the initial dose in serious cases and in all cases of tracheotomy should be double that of the light cases;

that the treatment with serum should be continued according to the course of the fever, to the pulse, and to the local appearances; that the total amount injected should be according to the severity of the case.

THE TREATMENT OF ITCHING.

Dr. Edward Bennet Bronson,⁴ describes at some length the means that may be employed to remove this distressing affection, and groups them as follows:

Measures to Remove Local Excitants.—These will include, first of all, such as directly tend to prevent scratching. Irritating contacts of all sorts should be most scrupulously avoided. Attention should be given to the underclothing. Woollen is almost never tolerated. The clothing next the skin should be of the softest material—cotton, linen, or possibly silk. Of further importance is the avoidance of immoderate temperatures, whether of heat or cold, and especially of sudden changes, which are peculiarly apt to excite itching. The local excitants may not only be extracutaneous, but also intra-cutaneous. Often they are incidental to the trophic changes of one of the so-called pruriginous diseases, in which case the treatment of the pruritus is included in that of the disease of which the itching is a symptom. When they arise from the toxic materials conveyed to the skin by the blood, the endeavor is to eliminate these materials by depurative remedies, more especially diaphoretics and diuretics. These measures failing or proving insufficient to secure the desired rest, it becomes necessary to have recourse to certain sedatives.

Sedatives.—Used internally, these are apt to be disappointing. The degree of general sedation that is required to affect the nerves of the skin, in so intense a disturbance as pruritus often is, affords a sufficient reason why this method of treatment is usually objectionable. Further than this, the depressing and atonic after-effect on the nervous system tends to exaggerate the general hyperæsthesia, which is already essentially an atonic condition, and thereby increases the tendency to itching. Especially objectionable on this score are most of the narcotic sedatives. The bromides, on the other hand, are often indispensable, and may be required in liberal doses. To avoid the enervating effects of loss of sleep, sulphonal or some other hypnotic is occasionally needed. In connection with this class, two internal remedies, namely, cannabis indica and gelsemium, are worthy of mention. The latter has proved of benefit in some cases, more especially according to the writer's experience in protracted cases of urticaria, but the doses required are so large as to forbid their long continuance. Finally, the antipyretics, phenacetin and antipyrin, have some effect upon pruritus, though less than upon the sensation of pain. The local sedatives used in this disease are generally far more satisfactory in their effects than the remedies just considered, especially where the disease is limited in extent. They are for the most part agents that tend to retard vital action. The fact that many of them are antiseptics probably implies something more than mere accidental coincidence. Typical among the remedies of this class is the group which includes carbolic acid, salicylic acid, salol and thymol, all antiseptics, and all having undoubted virtues as antipruritics. Carbolic acid is, perhaps, all considered, the most reliable and most generally useful antipruritic. It is preferably employed in oils or oint-

² Deutsche Medicinische Wochenschrift, April, 1894.

⁴ Medical Record, 1892.

ment. The following has been largely employed by the writer:

R. Acid. carbolic	. . . . .	31-ij
Liq. potass.	. . . . .	3i
Ol. lini.	. . . . .	3j M.
Sig. Shake before using.		

Salicylic acid and salol, though less energetic in their effects, act similarly to carbolic acid. They may be used in combination with other drugs, or by themselves in oils or ointments, or sometimes alcohol, and also in superfatted soaps. Thymol is also useful in certain cases, but, on account of its irritating effect, cannot be used when the skin is very sensitive. Corrosive chloride of mercury also has a reputation as an antipruritic. Cocaine has proved disappointing for two reasons: first, because of the difficulty of making its action felt through the intact epidermis; and, second, for the reason that any tissue, when long or frequently subjected to its action, suffered a certain atony and enervation that seems to render it more predisposed after than before to the irritation or irritability the drug was intended to alleviate. These objections by no means preclude its use entirely. It is often resorted to with most satisfactory results in localized forms about the mucous orifices, upon raw or abraded surfaces, and sometimes with appreciable effect even where the epidermis is apparently intact. Hot water, to be effective, should be over 100° F., and the applications should be prolonged for several minutes.

Sensory Stimulants. — Electricity, whether in the form of galvanism or faradism, has sometimes proved of decided benefit. Strychnia, in those cases of pruritus which may be called atonic, is a remedy of value.

Substitutive Irritants. — One of the best palliatives of itching is menthol, together with the peppermint preparations generally. Menthol relieves itching as it relieves pain, not by direct inhibitory action on the molecular movements of the sensory nerves, but chiefly, if not solely, as the writer believes, by substituting an exaggerated temperature sense for the perturbed sense of contact, or for the sensation of pain. It is usually employed in alcoholic solutions (grs. v – x to ʒi), and may be used in ointment. It is also with advantage combined with salol or thymol.

Alteratives of Cutaneous Nutrition. — They include not only absorbent and anti-catarrhal remedies to remove the products and curtail the processes of incidental inflammations which may act as contributory causes of the itching, but such agents as tend to control blood-supply and overcome hyperæmia. In this way act diaphoretics, and possibly diuretics, as well as by their substitutive and eliminative or depurative action. Thus it is probable that jaborandi, which is recommended by so many writers, acts in all three ways. This drug is especially useful when the skin is hot and dry, and where it has become the depot of noxious materials deposited from the blood, as, for example, in the itching of icterus. The local remedies belonging to this class include certain resinous or tarry substances. Such are ichthyol (five to ten per cent.), occasionally tar, resorcin (three per cent.), and benzoic acid or benzoin. Hydrogen peroxide has also proved beneficial.

Motor Depressants. — Among the internal remedies already mentioned, gelsemium and jaborandi belong to this class. Another remedy, more especially recommended in urticaria, is atropia. The good effect of

this drug in urticaria, when used in full doses, such as are always required to produce this effect (from one-hundred-and-fiftieth of a grain upward) is probably due to its secondary action; in this action the muscles relax and the vessels are dilated. Hot-water applications take the first place in local remedies belonging to this class. Here, also, may perhaps be included such local sedatives as hydro-cyanic acid, cyanide of potassium, corrium juice, tincture of arnica and chloroform.

Dr. Bronson closes the article by illustrating the therapeutic principles laid down by means of special forms of the affection.

Recent Literature.

Anæsthetics and their Administration. A Manual for Medical and Dental Practitioners and Students. By FREDERICK W. HEWITT, A.M., M.D. (Cantab.). With illustrations. London: Charles Griffin & Co. 1893.

We have before alluded to the many advantages of the system of regularly appointed anæsthetists which prevails in English hospitals. This work of Mr. Hewitt is a proof of those advantages. He has put the careful experience of many years into a book which will stand easily at the head of all works on the therapeutic administration of anæsthetics. The data are well arranged under four parts: Preliminary Considerations; The Administration of the Selected Anæsthetic; The Management and Treatment of the Difficulties, Accidents and Dangers of General Anæsthesia; The Condition of the Patient after Administration.

Mr. Hewitt has given the question of "Chloroform or Ether?" careful consideration, and makes no hesitancy in advocating ether as the surest, safest and best anæsthetic for general use. The whole book is worthy of study by all who have to do with anæsthetics, either as surgical instructors, pupils or general practitioners.

The Johns Hopkins Hospital Reports. Report in Gynecology, II. Baltimore. 1894.

This volume of more than 400 pages is very interesting, not only as giving an idea of the amount of work done in this department in Johns Hopkins Hospital, but also as illustrating its thoroughness and its value from an educational standpoint. The material at hand has been so carefully worked over and utilized that it is full of suggestions for the practitioner. The result is a series of monographs, nineteen in all, most of them by Dr. Kelly, which are of varying importance and interest, but all of them well worth study. They are fully illustrated with figures and plates, which add much to their value.

Of especial interest may be mentioned the articles on operations for the suspension of the retroflexed uterus, urinalysis in gynecology, the importance of employing anæsthesia in the diagnosis of intra-pelvic gynecological conditions, and one hundred cases of ovariectomy performed on women over seventy years of age.

This series of reports would be a valuable addition to any gynecologist's library.

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ARTERIO-SCLEROSIS AND ARTERITIS: MODERN VIEWS AS TO ETIOLOGY.

THE conception of arterio-sclerosis as a general disease of the arteries finding expression in interstitial inflammations of various viscera, originated with Lancereaux in 1871, and, independently, a year later with Gull and Sutton. The latter designated the condition as an "arterio-capillary fibrosis," and they supposed the capillary net-work to be invaded by a "hyaline degeneration"; while Lancereaux more correctly defined the disease as a generalized endarteritis, followed by renal, cardiac, or other endarterites, and subsequent interstitial inflammation.

This notion of a general idiopathic arterial disease with visceral manifestations has since been established as an irrefragable medical doctrine, has been fruitful in practical applications, and it has been shown that there is perhaps no more common disease of the age in which we live than arterio-sclerosis. "Longevity," says Osler (in quoting from a much older authority), "is a vascular question, for a man is only as old as his arteries. To a majority of men death comes primarily or secondarily through this portal."

Arterio-sclerosis and atheroma designate two distinct localizations of a slow morbid process, atheroma being applied to the inflammatory or degenerative changes as met with in the larger vessels. Arterio-sclerosis, according to Gull and Sutton, Mahomed, Huchard, and others, is the parent of atheroma and of all the fatty, fibroid and calcareous changes in both large and small vessels. The primary morbid process is an obliterating endarteriolitis of the vasa-vasorum or nutrient vessels of the artery; dystrophy, local infiltration and degeneration in the media and adventitia follow. "These lesions lead to a weakening of the wall in the affected area, at which spot the proliferative changes commence in the intima, particularly in the subendothelial structures, with gradual thickening and the formation of an atheromatous button or patch. A similar process goes on in the smaller vessels, and it can be seen on section that each patch of endarteritis corre-

sponds to a defect in the media, and often to changes in the adventitia."

According to this view, in this as in other dystrophic diseases where the nobler elements perish from lack of their nutritive supply, the connective-tissue elements proliferate and form an overgrowth which by its presence obstructs function and damages or destroys the surrounding structures; or, if fragile and of low vitality the new growth becomes necrosed and fatty, and may eventually be removed or undergo the calcareous transformation.

The question whether the visceral scleroses (being connective-tissue inflammations) are always primarily diseases of the arterial system, is answered differently. Mahomed, with Gull and Sutton, taught that the nephritis is but a manifestation of a diathesis or poison which affects synchronously the cardio-vascular system. In all cases, "the blood-poison, of whatever nature it may be, produces certain changes in the cardio-vascular system, at first functional and afterwards organic by inducing high arterial tension and subsequently hypertrophy of the heart and thickening of the vessels; and at the same time it affects not only the kidneys but also the other excretory organs which all alike become congested in their efforts to excrete the poison; hence in these organs certain changes occur — interstitial, if the disease be chronic, epithelial, if acute."¹

There is no doubt that this is a part of the truth, but it is not all the truth, and pathologists have recognized the fact that there is an interstitial nephritis that is primary, and may, at least in its early stages, be independent of general arterial disease — this is the case with the senile kidney and saturnine nephritis, according to Charcot. Certain chronic fibroid pneumonias, according to the same authority, may always remain local; so also a variety of syphilitic hepatic sclerosis, hypertrophic cirrhosis, and (according to Lancereaux) common alcoholic cirrhosis.

As to the nature of the poison, there is not entire agreement among pathologists respecting a disease which, according to Mahomed's estimate, affects to a greater or less extent seventy-five per cent of all persons who pass the age of sixty. Lancereaux, who has written much on arterio-sclerosis, is sure of but one causal agent, which he calls *herpetism*, which he regards as a "vaso-trophic neurosis, always manifesting itself by multiple affections of divers parts and systems such as hæmorrhoids, varices, dry and gouty and rheumatic arthritides, migraines, eczematous diseases, etc." As for alcohol, he denies its causal influence, except so far as it favors development of the peculiar diathesis; that the abuse of this poison causes local fatty lesions of the heart and arteries he as positively affirms.

Gueneau de Mussy also insists on the influence of herpetism in the production of atheroma, and includes gout and rheumatism as being the diathetic maladies *par excellence*. He prefers the term *arthritism*² to her-

¹ Lectures in Lancet, 1879.

² De l'Atherome Arteriel: Leçons de Clinique Médicale, t. 1.

petism. This author, whose contribution to the subject of atheroma will always possess great scientific value, concludes from twenty-five carefully tabulated clinical observations in which the autopsy was conducted with great care, that "the lesions produced in the arteries by alcoholic excesses, are earlier, deeper, more rapid and more pronounced than those produced under the influence of all other causes."²

It has been disputed whether syphilis is ever a cause of generalized arteritis; certainly the arterial lesions which it produces, in the tertiary stage, are frequently limited to arteries with prominent lymphatic sheaths as those of the cerebrum. The same may be said of malarial endarteritis, which always affects the large vessels, especially the aorta, taking the form of gelatinous or indurated patches (Lancereaux).

Over-eating, overwork of the muscles (by increasing the peripheral resistance and raising the blood pressure), and renal disease (by increasing the toxic quality of the blood and thus poisoning the vessels) have been reckoned as causes: and Huchard assigns a considerable rôle to mental emotion (worry and anxiety), which, he thinks, acts by producing spasm of the arterioles and vascular hypertension.

In senile arterio-sclerosis, complex causal factors exist which may be principally classed under the heads of dystrophic and toxic. This is really a diffuse arterio-sclerosis with extreme degeneration of the arterial coats, with nodular, beady indurations in the smaller and calcareous patches in the larger arteries. It is astonishing with what apparent good health many old persons will live, and to an advanced age, who have long had calcareous arteries and granular kidneys.

There is a close relationship between *plethora* and arterio-sclerosis, as Germain Sée has pointed out.⁴ Two causes, he says, favors its development: (1) physical causes, namely, intra-vascular obstacles which increase vascular pressure and owe their origin to disregard of hygienic laws, excesses or sedentary life; (2) chemical, autoxic and infectious agents; alcohol, gout, diabetes, syphilis. There are two classes of persons who early develop increased vascular tension: (a) those that take much food and little exercise and develop adipose tissue; (b) then, sometimes, anæmic individuals who are obliged to lead a sedentary life. Every copious repast determines a certain temporary plethora. If more food is ingested before the previous plethora has been disposed of, there gradually is established a permanent vascular repletion.

After showing how increased adiposity obstructs the abdominal circulation and raises the pressure in the aorta, he points out the fact that a considerable venous distention is also produced, showing itself in superficial varices, hæmorrhoids, predisposition to pulmonary catarrh. The development of sclerosis is always preceded by this stage of increased vascular tension. This abnormal pressure is the principal cause of the general endarteritis.

ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL.

THE eightieth annual report of the Massachusetts General Hospital and McLean Asylum for the year 1893, while not showing any marked changes in this over recent years, describes enlargements and improvements already begun, which will increase the usefulness of the two institutions in the near future. The report opens with a clear and concise summary by a Committee of the Trustees, of the principal items of interest.

The year shows a deficit of over \$29,000, the largest in the history of the hospital, a great part of which, however, is owing to necessary repairs and alterations connected with the buildings. There was a falling off in the receipts in the second six months of \$6,741, while the increase in disbursements was \$8,470. This falling off is mainly due to the temporary closing of Ward B, also to the fact that the year has been one of great and exceptional financial depression.

On December 1st, the new office of examining physician to out-patients was made, the previous arrangements for examination and registration not having proved wholly satisfactory. The usefulness of this office in preventing the mingling of cases of contagious diseases with the out-patients in the waiting-rooms has already been proved.

In the hospital building some considerable and important changes have been made. The old Treadwell Library-room has been adapted to give a much needed addition to the work-room of the enlarged staff of house-officers, while the Treadwell Library itself has been transferred to a new room in the second story. Additional house-officers' rooms, with suitable bath-rooms, have been provided. Changes and additions to the amphitheatre building include an addition of one story, containing a new sterilizing-room for the preparation of surgical instruments and dressings. A new dressing-room for the surgeons has also been provided. A gift of \$50,000 has made it possible to erect a new isolated ward for contagious diseases; such a ward has been needed since the foundation of the hospital. A card catalogue of all the cases at the hospital from 1871 has been started. An appeal is made for a well-equipped laboratory; and for funds for the general expenses both of the hospital and of the asylum. The percentage of free patients at the hospital is enormous, while the subscriptions for free beds have diminished.

The buildings of the new McLean Asylum at Waverley have progressed steadily during the year. The description of four of them, not included in last year's report, appears in this one. Two interesting reports are printed; one upon the occupation of patients at the asylum, by the Superintendent; the second by a special committee on the case of W. H. King, a patient in the asylum, whose retention has been the source of much litigation.

In the hospital the total number of patients admitted was 3,524, an increase of 200 over the previous year. The number of out-patients was 26,527, with a total

² De l'Atherome Arteriel: Leçons de Clinique Médicale, t. i., p. 304.

⁴ Arterial Disease; Sajou's Annual, 1890; Medical Bulletin, March 17, 1894.

attendance of 86,579, about the same number as in 1892.

In the asylum, although the average number of patients, 177, was larger than in previous years, the number of admissions and discharges was less. The coming removal of the asylum from Somerville to Waverley will be an important epoch in its history; the buildings, roads, and other works at Waverley are now so far advanced that they may easily be finished before September 29, 1895, when the estate at Somerville is to be vacated.

MEDICAL NOTES.

THE NUMBER OF PATIENTS AT KING'S COLLEGE HOSPITAL.—During the year just closed there were 2,372 patients admitted to King's College Hospital, London, and 24,000 out-patients treated.

MR. GLADSTONE OPERATED UPON FOR CATARACT.—Mr. Gladstone was successfully operated upon for cataract by Mr. Nettlehip last week, and has been making an excellent recovery.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA. At the annual meeting held May 21st, Dr. John B. Roberts, of Philadelphia, was elected president for the ensuing year.

DR. PEPPER'S SUCCESSOR AS PROVOST OF THE UNIVERSITY OF PENNSYLVANIA.—Mr. Charles C. Harrison has been elected Provost of the University of Pennsylvania, to succeed Dr. Pepper. He has accepted provisionally.

SAD DEATH OF A BROOKLYN, N. Y., PHYSICIAN.—Dr. Charles James, of Brooklyn, died on May 22d from an accidental dose of tincture of aconite. He was twenty-seven years old, and a graduate of the Long Island College Hospital Medical School.

A SUCCESSFUL SPLENECTOMY.—Dr. James Murphy, of Sunderland, England, did a splenectomy upon a woman forty-five years old, on April 25th. The operation was undertaken for abscess and hypertrophy. The wound healed promptly, and at last reports the patient was making a satisfactory progress.

A LEPER HOSPITAL FOR LOUISIANA.—At the request of the Senators and Representatives from Louisiana, the Secretary of War has given New Orleans and the State of Louisiana the right to use the Government military reservation, at Fort Pike, for a hospital for lepers and patients with contagious diseases.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.—Dr. Baccelli has written to Señor San Martín, the delegate of the Spanish Government to the International Medical Congress at Rome, that there is a generally expressed desire that the Thirteenth Congress, the one following that in Russia, should be held in Madrid.

CONGRESS OF THE FRENCH SURGICAL SOCIETY.—The French Surgical Society will hold its annual meeting this year at Lyons, probably in the early part of October. This is the first time the meeting will have

been held outside of Paris. The matter was decided by a *plébiscite*, and the result is regarded as a victory for the advocates of decentralization.

PLAGUE AT HONG KONG.—A serious epidemic of disease is reported from Hong Kong. Since the middle of April over a thousand deaths have occurred. The disease is said to be similar to the plague which decimated the population of Hochow ten years ago; but as the cholera is at present reported to be general in Canton, the disease at Hong Kong is not unlikely to be of the same character.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, May 30, 1894, there were reported to the Board of Health of Boston the following numbers of cases of acute infectious disease: diphtheria 37, scarlet fever 65, measles 24, typhoid fever 12. There were no cases nor deaths from small-pox during the week. There are no patients at the Canterbury Street Hospital. The last case of small-pox was discharged from Gallop's Island this morning.

THE MASSACHUSETTS MEDICAL REGISTRATION BILL.—The Medical Registration Bill was passed by the House on Monday May 21st, and now awaits the Governor's signature before becoming a law.

COLLEGE OF PHARMACY COMMENCEMENT.—The twenty-sixth annual commencement exercises of the Massachusetts College of Pharmacy was held in Association Hall, Boston, May 23d. Seventeen men received degrees.

THE SOMERVILLE, MASS., HOSPITAL.—The annual report of the Somerville Hospital shows that 325 patients were cared for during the past year, the average number being 14. The total running expenses were \$9,482.08, the average cost of each patient being \$12.72 per week.

PHYSICAL TRAINING AT WELLESLEY COLLEGE.—The Committee on Health and Physical Training of Wellesley College calls attention to the urgent necessity of improved facilities for both in-door and out-door exercise, and systematic hygiene and physical training for the young women of the college such as are abundantly provided for colleges for young men.

THE CONNECTICUT SCHOOL VACCINATION LAW CONSTITUTIONAL.—The Superior Court, at Hartford, Conn., has decided, in a suit brought against the New Britain School Board to compel them to admit unvaccinated children to the public schools, that the law giving the school board authority to order all school children vaccinated, and to exclude those not vaccinated from the schools, is constitutional.

THE NEW CATALOGUE OF THE MASSACHUSETTS MEDICAL SOCIETY.—A new and attractive Catalogue of the Officers, Fellows and Licentiates of the Massachusetts Medical Society from 1781 to the close of 1893 has just been prepared by the Treasurer, Dr. E. J. Forster, and issued by the Society. A special effort was made to give full names and to eliminate all

initials; and this has been done in nearly every instance, there being but thirty-five Fellows whose full name is not known. The total number of Fellows since the foundation of the Society has been 4,905, of whom 1,927 are living. In addition to these there were 178 Licentiates who never became Fellows of the Society. There have been 145 Honorary Members, of whom 7 are now living. In addition to the statistical tables and lists there is an interesting chapter of historical memoranda.

NEW YORK.

NEW YORK COUNTY MEDICAL ASSOCIATION AND THE CODE. — At a meeting of the New York County Medical Association held May 21st, a resolution was unanimously adopted to the effect that the Association re-affirms its adherence to the code of ethics of the American Medical Association, and instructs its delegates to the approaching meeting of the latter in San Francisco to unite with other delegates from the State of New York in maintaining the code as it now stands.

THE MEDICAL DEPARTMENT OF THE NATIONAL GUARD OF NEW YORK. — At this meeting Dr. Joseph D. Bryant, who has been Surgeon-General of the State for the last ten years, read a valuable paper on "The Medical Department of the National Guard: Its Status in Two Decades." In it he spoke of the general inefficiency of this department of the militia up to 1884 and of the radical reforms that have taken place since that date. It is only due to Dr. Bryant, as was clearly brought out in the discussion on his paper by regimental surgeons, that these reforms have been instituted and carried out by the Surgeon-General himself, who has devoted much time and attention to the matter.

PUBLIC HEALTH. — The reports of the Bureau of Vital Statistics still continue to show an excellent state of the public health. In the week ending May 26th there were reported 721 deaths, which represents an annual death-rate of but 19.28 per thousand of the estimated population. The mortality from pneumonia has diminished to a considerable extent, but is still larger than that from consumption. During the week the deaths from the former numbered 89 and from the latter, 82. Diphtheria continues by far the most fatal of the zymotic diseases, and caused 56 deaths. The deaths from scarlet fever were 16, from measles, 8, and from cerebro-spinal meningitis, 5. A considerable number of cases of small-pox are still reported every week, and there were four deaths from it during the week named. There is but little typhoid fever in the city, and only three deaths were caused by it.

THE TENTH ANNUAL MEETING OF THE FIFTH DISTRICT BRANCH. — The tenth annual meeting of the Fifth District Branch of the New York State Medical Association was held in Brooklyn on May 22d. The address of the President, Dr. J. D. Rushmore, of Brooklyn, was on "The Prevention of the Disagreeable and Dangerous Symptoms produced by Ether as a General Anæsthetic." A number of eulogistic addresses were made on the late Dr. Alfred L. Carroll, and bio-

graphical sketches were read of other members deceased during the past year. Among the papers read were the following: "The Dietetic Treatment of Consumption," by Dr. T. J. McGillicuddy; "Report of a Case of Chronic Peritonitis with Intestinal Fistula — Celiotomy, Enterorrhaphy, Recovery," by Dr. F. H. Wiggin; "The Treatment of Chronic Oöphoritis by Electricity," by Dr. Edward Sanders. The meeting was closed by a discussion on "Vaccination," which was opened by Drs. F. A. Jewett, S. E. Jelliffe and H. H. Morton, of Brooklyn.

PHILADELPHIA.

RESIGNATION OF DR. EDWARDS. — Dr. Jos. F. Edwards has resigned from the State Board of Health.

THE HOUSE-TO-HOUSE VISITATION, which accomplished so much good last summer in improving public health, has again been ordered by the city authorities on general sanitary grounds.

THE ESTABLISHMENT OF SECTIONS IN THE COLLEGE OF PHYSICIANS. — The establishment of Sections in the College of Physicians has proved very profitable, the meetings being well attended and the discussions valuable. A plan is under consideration whereby the papers and discussions shall appear in their proper position as contributions to the annual volume of Transactions of the College.

NON-VACCINATED CHILDREN MAY ATTEND THE PUBLIC SCHOOLS. — Owing to a conflict of authority between the City Board of Health and the Board of Education, the latter has withdrawn its prohibition recently issued, against non-vaccinated children attending public schools. In view of the fact that no epidemic is threatened at present, they were not willing to resort to extreme measures.

JEFFERSON MEDICAL COLLEGE APPOINTMENTS. — The Trustees of the Jefferson Medical College discussed the proposed plan of re-organization which included the establishment of the office of Provost, and concluded to postpone further consideration of the subject until next fall. Dr. S. MacCuen Smith was elected Clinical Professor of Otolaryngology, and Dr. W. Joseph Hearn, Clinical Professor of Surgery, and Dr. E. P. Davis, Clinical Professor of Obstetrics.

THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. — This Association held its semi-centennial meeting in Philadelphia at the Continental Hotel May 15th to 19th. Dr. John Curwen of the Pennsylvania State Hospital for the Insane at Warren, presided and delivered a very valuable address. Governor Pattison delivered an Address of Welcome in which he reviewed the progress of the treatment of the insane in this State since 1844. An address, by invitation, was delivered by Dr. Weir Mitchell, who pointed out many flaws in prevalent methods of treating the insane and described an ideal hospital. At the closing session the society elected Dr. Mitchell to honorary membership. Dr. Edward Cowles, of Somerville, Mass., was elected President and Denver selected as the next place of meeting.

Miscellany.

A CLASSIFICATION FOR INFECTIOUS DISEASES.

At a recent meeting of the New York Academy of Medicine, Dr. W. H. Thomson read a paper on the need of a more accurate nomenclature for infectious and contagious diseases, and offered the following classification:

(1) Infectious diseases are due to the presence of their respective living micro-organisms in the body.

(2) Infectious diseases are divisible into three classes: *a*, communicable, *b*, non-communicable, *c*, septic.

(3) The communicable diseases are those whose origin is from an animal body, examples of which are small-pox, Asiatic cholera and tuberculosis.

(4) The non-communicable infectious diseases are those whose origin is not from an animal body, but from a place or thing, examples of which are ague, yellow fever and miasmatic diseases in general.

(5) The communicable diseases are divisible into two classes, according to the ordinary modes of their communication: *a*, into the contagious, *b*, into the non-contagious communicable diseases. The contagious communicable diseases are those in which simple proximity to the sick is sufficient to communicate the infection; examples of which are scarlet fever, measles, small-pox, diphtheria, mumps, etc. Isolation of the sick in these cases is, therefore, needful to prevent infection. The non-contagious communicable diseases are those in which the communication is not by simple proximity to the sick, but through intermediate means of communication. Isolation of the sick with them, therefore, is neither needful nor effective in comparison with measures directed against intermediate means of infection; examples are typhoid fever, Asiatic cholera and tuberculosis.

(6) The septic infectious diseases are those in which infection is introduced through a wound or abrasion; examples are erysipelas, hydrophobia, tetanus, etc.

THE SYMPTOMATIC TREATMENT OF DISEASE.

In a recent address before the Harveian Society, Dr. Samuel West said:

"The treatment of symptoms is often spoken of with some contempt—not, I think, by clinical physicians, who are not prepared to discard remedies because they cannot explain their action. It is sufficient for them that experience proves the value of the drugs they use. It is true that we have so far no remedies which will kill disease germs in the body, and therefore directly cure any germ disease; but the germs produce poisons, and these by their action on the body, in all probability cause the symptoms of the disease. These poisons we may be able to neutralize or destroy, if we cannot kill the germ. What the poisonous substances produced are we do not know, and for antidotes to them we are, and have long been, groping in great darkness, it is true; yet I think it is not unlikely, when these poisons are isolated and investigated outside the body, that among the old and once-trusted remedies, which empiricism has discovered and fashion discarded, will be found some of the true antidotes we want, and thus the symptomatic treatment of disease, now regarded as so unscientific and irrational, be discovered to rest upon a truly scientific foundation."

Correspondence.

THE MEDICAL REGISTRATION BILL.

Boston, May 28, 1894.

MR. EDITOR:—Is the health of the people of this Commonwealth as safe in the hands of ignorant "practisers" of medicine as it is in the care of educated physicians? If so, then our calling is the only profession or vocation of which such a statement can truthfully be made.

Granted, that the more knowledge the doctor has, the better care he will be able to give the sick and wounded, is it desirable and possible to raise the standard of medical education? How shall this be done? The various medical schools, as a rule, are doing what they can in this direction.

Can anything be done to protect the innocent and ignorant sick and wounded from these pretenders, who have never studied in any school, or anywhere else, and who are destitute, not only of knowledge and experience, but of character and good repute? Is it desirable, that any aid or protection should be extended to the unfortunate victims of disease, when seeking for help in their distress, or shall they be left to the tender mercies of the medical bunco-steerers of the community?

It is assumed by the writer, that there are not a few sensible people in this State, who think and feel strongly, that some light, as to the qualification of doctors, should be given the people through legislation. This is the object of the medical bill. It is designed to benefit the people and not the doctors. The educated physicians of Massachusetts ask for no protection and no legislation for themselves, or for their business against quackery. They are abundantly able to take care of themselves. But as no class in the community sees the evil results, the needless suffering, both mental and physical, and great waste of money, arising from the unlimited license of quackery, as do the physicians, upon them falls the duty of calling attention to the matter.

The medical bill undertakes in no way to say who shall practise medicine, or what "school" or "system" any one shall practise, or what sort of a physician or doctor or "healer" any one may or may not employ. It simply says, that every one in this State, who puts the title of "Doctor" to his name in public, shall be possessed of a reasonable amount of knowledge of his business. That is all. It is not a great step in the right direction, but it is something.

It is here authoritatively stated that, "the medical member of the senate" is the author of the bill, and that, of all men, he is the one most responsible for its origin, and present status. His great regret is, that it could not have been made more complete.

Very truly yours,

GEORGE W. GAY, M.D.

METEOROLOGICAL RECORD.

For the week ending May 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.				Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. .		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
		Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.		8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S..13	30.06	66	80	52	53	34	41	W.	N.W.	12	22	O.	C.	0.91 0.69	
M..14	30.08	54	62	46	28	39	34	N.W.	N.W.	22	10	O.	C.		
T..15	29.86	54	65	44	33	40	36	N.W.	N.W.	20	8	C.	C.		
W..16	29.80	60	74	46	34	40	37	N.W.	S.E.	12	18	C.	C.		
T..17	29.84	61	70	52	75	68	72	N.E.	S.W.	9	11	C.	C.		
F..18	29.80	58	66	51	97	91	94	E.	S.E.	5	10	O.	O.		
S..19	29.88	54	58	51	97	100	98	N.E.	N.E.	6	9	O.	R.		

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 19, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.	
New York	1,591,306	759	316	20.41	14.95	2.47	11.96	1.66	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	347	114	14.79	14.21	2.32	5.22	.58	
Brooklyn	978,394	359	121	15.12	15.40	.84	6.16	2.24	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,397	—	—	—	—	—	—	—	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	92	21	7.63	8.72	4.36	2.18	—	
Cincinnati	305,000	121	40	11.92	14.94	7.47	1.66	—	
Cleveland	280,000	123	69	19.44	20.25	2.43	4.15	4.15	
Pittsburg	263,709	80	33	18.50	13.75	5.00	3.75	3.75	
Milwaukee	250,000	—	—	—	—	—	—	—	
Nashville	87,754	33	11	18.18	3.03	15.15	3.03	—	
Charleston	65,165	43	15	6.99	2.33	4.66	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	30	13	10.00	23.33	3.33	6.66	—	
Fall River	87,411	31	19	12.92	16.15	12.92	—	—	
Lowell	87,191	22	10	4.55	4.55	—	—	—	
Cambridge	77,100	34	13	—	—	—	—	—	
Lynn	62,656	11	0	—	8.09	—	—	—	
Springfield	48,684	16	3	—	12.50	—	—	—	
Lawrence	48,365	—	—	—	—	—	—	—	
New Bedford	45,886	24	13	4.16	16.64	—	—	—	
Holyoke	41,278	18	11	22.22	38.88	—	—	11.11	
Salem	32,233	14	4	—	7.14	—	—	—	
Brookton	32,140	8	1	—	37.50	—	—	—	
Haverhill	31,896	11	1	—	18.18	—	—	—	
Chelsea	30,264	7	0	—	14.28	—	—	—	
Malden	29,394	8	2	—	37.50	—	—	—	
Newton	27,556	5	1	—	40.00	—	—	—	
Fitchburg	27,146	3	0	—	33.33	—	—	—	
Taunton	26,972	7	1	28.56	—	—	14.28	—	
Gloucester	26,688	7	1	—	—	—	—	—	
Waltham	22,058	7	2	28.56	—	—	14.28	14.28	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,802	4	3	25.00	—	—	—	—	
Everett	16,585	1	0	—	—	—	—	—	
Northampton	16,331	4	1	—	25.00	—	—	—	
Newburyport	14,073	5	0	—	—	—	—	—	
Amesbury	10,920	5	2	—	20.00	—	—	—	

Deaths reported 2,254: under five years of age 849; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 348, acute lung diseases 327, consumption 241, diphtheria and croup 152, diarrhoeal diseases 63, scarlet fever 35, whooping-cough 25, measles 23, typhoid fever 17, cerebro-spinal meningitis 13, small-pox 7, erysipelas 6.

From whooping-cough Brooklyn 7, New York and Pittsburg 4 each, Philadelphia and Cambridge 3 each, Cincinnati 2, Cleveland and Nashville 1 each. From measles New York 7, Brooklyn and Cleveland 6 each, Philadelphia 4. From typhoid fever Philadelphia 6, New York 3, Brooklyn 2, Washington, Cincinnati, Pittsburg, Lowell, New Bedford and Holyoke 1 each. From cerebro-spinal meningitis New York 6, Cleveland 4, Holyoke, Taunton and Fitchburg 1 each. From small-pox New York 5, Brooklyn 2. From malarial fever New York 6, Brooklyn 1. From erysipelas New York and Brooklyn 3 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 12th, the death-rate was 18.2. Deaths reported 3,649: acute diseases of the respiratory organs (London) 272, measles 232, whooping-cough 139, diphtheria 74, scarlet fever 56, diarrhoea 40, fever 31, small-pox (Birmingham 6, London 4, Bradford 2, Manchester and Oldham 1 each) 14.

The death-rates ranged from 9.5 in Derby to 25.2 in Birmingham; Blackburn 17.0, Bradford 15.4, Cardiff 16.1, Halifax 14.6, Leeds 16.5, Leicester 14.6, Liverpool 23.8, London 18.4, Manchester 20.6, Newcastle-on-Tyne 17.3, Norwich 16.3, Nottingham 19.4, Portsmouth 12.6, Sheffield 17.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 19, 1894, TO MAY 26, 1894.

Leave of absence for four months, is granted MAJOR PETER J. A. CLEARY, surgeon.

CAPTAIN WILLIAM G. SPENCER, assistant surgeon, having been found by an Army retiring board, incapacitated for active service, will proceed to his home.

CAPTAIN ALONZO R. CHAPIN, assistant surgeon, is relieved from duty at Fort Hancock, Texas, and ordered to new Fort Bliss, Texas, for duty.

FIRST-LIEUT. FRANCIS A. WINTER, assistant surgeon, is re-

lieved from duty at new Fort Bliss and from temporary duty at old Fort Bliss, Texas, and ordered to Fort Hancock, Texas, for duty at that post.

CAPTAIN GEORGE MCCREERY, assistant surgeon, will, upon the abandonment of Fort Sidney, Nebraska, report in person to the commanding officer, Fort D. A. Russell, Wyoming, for duty at that post.

CAPTAIN ROBERT B. BALL, assistant surgeon, is relieved from temporary duty at Fort Monroe, Virginia, and ordered to Fort Adams, Rhode Island, for duty, relieving CAPTAIN WILLIAM C. BORDEN, assistant surgeon.

CAPTAIN BORDEN, on being thus relieved, is ordered to Fort Snelling, Minnesota, for duty at that post, relieving CAPTAIN CHARLES F. MASON, assistant surgeon.

CAPTAIN MASON, on being thus relieved, will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for duty at that post.

LIEUT.-COL. FRANCIS L. TOWN, deputy surgeon-general, is relieved from temporary duty in the office of the medical director, Department of the Missouri, and will report in person to the commanding general, Department of Texas, for duty as medical director of that Department.

CASUALTY.

COLONEL JOSEPH C. BAILY, assistant surgeon-general, died May 16, 1894, while en route from El Paso to San Antonio, Texas, in the line of duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 26, 1894.

B. R. WARD, assistant surgeon, detached from Bureau of Medicine and Surgery and to the "Vermont."

C. A. SIEGFRIED, surgeon, ordered to the U. S. S. "Cincinnati."

MAINE MEDICAL ASSOCIATION.

The forty-second annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Wednesday, Thursday and Friday, June 13, 14 and 15, 1894.

WEDNESDAY, JUNE 13TH.

"Typhoid Fever, with Some New Notions Regarding its Treatment." By E. M. Fuller, M.D., Bath. Discussion by A. K. F. Meserve, M.D., Portland; S. J. Bassford, M.D., Biddeford. "An Interesting Obstetrical Case." By Geo. Goodwin, M.D., Millbridge. President's Address. "Treatment of Hemorrhoids by Clamp and Cautey." By B. B. Foster, M.D., Portland. Discussion by S. H. Weeks, M.D., Portland. "Puerperal Eclampsia." By H. B. Palmer, M.D., Phillips. Discussion by Alfred Mitchell, M.D., Brunswick. "The Artificial Feeding of Infants." By W. B. Small, M.D., Lewiston. Discussion by B. F. Bradbury, M.D., Norway; Geo. H. Brickett, M.D., Augusta. "The Principles of Antiseptic Surgery." By W. L. Dana, M.D., Portland. "Surgery of the Ovary." By A. Palmer Dudley, M.D., New York. Discussion by Alfred King, M.D., Portland. "A Unique Case of Urinary Calculi." By S. H. Weeks, M.D., Portland. "The Code Question from the Standpoint of a General Practitioner." By D. A. Robinson, M.D., Bangor.

THURSDAY, JUNE 14TH.

"The Surgical Demands of a Country Practice." By W. P. Giddings, M.D., Gardiner. Clinic at the Maine General Hospital at 11.30 o'clock, with special reference to the illustration of Surgical Dressings. Election of officers for the ensuing year. "Symphysectomy with Report of Case." By J. B. O'Neill, M.D., Portland. Discussion by Stanley P. Warren, M.D., Portland; F. E. Small, M.D., Portland. "The Chemistry of Decomposition." By Prof. F. C. Robinson, M.D., Brunswick. Report of Cases: "Caesarian Section," "Extra-Uterine Pregnancy." By S. C. Gordon, M.D., Portland. Report of "Cases of Abdominal Section." By Wallace K. Oakes, M.D., Auburn. Business. Annual Oration. By Henry H. Smith, M.D., Machias, at 8 P. M.

FRIDAY, JUNE 15TH.

Reports of delegates to other medical societies. Voluntary papers or reports of cases. Report of the Board of Censors. Unfinished business.

The Business Committee desire that members will come prepared to contribute the results of their experience and observation, by reports of cases, with clinical notes or queries upon diagnosis, treatment, action of remedies, etc.

DR. JOHN A. DONOVAN, President, Lewiston.

DR. CHAS. D. SMITH, Recording Secretary, Portland.

RECENT DEATH.

GEORGE J. ROMANES, Fullerian Professor of Physiology in the Royal Institution of London and Rosebury Lecturer on Natural History in the University of Edinburgh, died in London, May 23d, aged thirty-six years.

Addresses.

SUPRAPUBIC HYSTERECTOMY:

THE ADDRESS OF THE CHAIRMAN OF THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN, OF THE AMERICAN MEDICAL ASSOCIATION, SAN FRANCISCO, JUNE 5, 1894.

BY JOSEPH EASTMAN, M.D., LL.D.,

Formerly Professor of Anatomy and Professor of Gynecology and Abdominal Surgery, Central College of Physicians and Surgeons, Indianapolis, Ind.

MR. CHAIRMAN, LADIES AND GENTLEMEN:—It seems best on this occasion to turn aside from the usual custom of reporting progress in the department of obstetrics and gynecology, a subject which has been so often and ably presented by my predecessors, and call your attention to the present status of suprapubic hysterectomy as viewed from the standpoint of personal observation and clinical research, with the hope that I may contribute in some small measure to the profitable discussion which I am quite sure will follow the reading of the valuable papers on your programme.

It is not my intention to report a series of operations made for the removal of symmetrically formed pear-shaped tumors, with well-defined broad ligaments; with uterine arteries easily accessible and seen pulsating in their anxiety to be ligated; tumor ligaments and arteries dealt with by some definite method; each operation made in exactly so many minutes, and all the patients making uneventful recoveries. The literature of the subject is already cursed with such productions. Therefore I would rather suggest such means and methods as experience has taught me will furnish the best possible results in dealing with tumors by no means symmetrically formed; with broad ligaments displaced and disorganized by nodular masses interfering with the ligation of arteries and the easy formation of pedicles.

Despite the efforts of some to name a distinct method of operating because a flap is made here, or a ligature placed there, the problems of suprapubic hysterectomy are rapidly nearing their solution. Those engaged in the work are divided into two classes: first, those who have been and are yet satisfied with forming a pedicle and fixing the same in the abdominal wound; second, those who were not satisfied that this method was the best that could be devised, and who have been earnestly endeavoring to reach some method which shall disregard morphology of tumor, of broad ligaments and the location of uterine arteries.

On February 3, 1887, knowing full well that abdominal fixation of the pedicle in suprapubic hysterectomy had at that time given the lowest rate of mortality, I decided not to operate in that way, but planned and executed an operation which in every essential feature was an extirpation of almost the entire cervix. A large cautery passed three times down through the cervix in reality destroyed a large portion of what little cervix I had left. A rubber drainage-tube was inserted for vaginal drainage. In a recent discussion in the *New York Journal of Obstetrics and Gynecology*, the operations by Stimson, Krug, Baer and myself are spoken of as if they were all operations of total ablation of the uterus. If these operations are to be considered, then the operation by Stimson in Novem-

ber, 1888, was antedated by my determination to secure something better than the abdominal fixation of the pedicle on February 3, 1887.

It is not my purpose to occupy time in discussing questions of priority in making an operation, although the operation, including the use of my hysterectomy staff, as I demonstrated it at the International Medical Congress in Berlin, has since been made many times by Krobak, of Vienna, and numerous American operators, with great satisfaction.

I concede the fact that where a given fibroid tumor has no nodular masses in the region where we would form a pedicle or imbedded in the broad ligaments, and where the abdomen is not exceedingly fat, the abdominal fixation has given results, in the hands of expert operators, in a very high degree satisfactory. So far as I have been enabled to read the writings of its warmest advocates, none of them have mentioned the very strongest point in its favor; namely, that in this method we have practically one wound; whereas, in the total or partial extirpation method we have two wounds, the one in the abdomen, the other in the pelvis, the latter extending through connective-tissue, rich in lymphatics, down to the vagina—an incubator for many varieties of bacteria which cannot always be sterilized and maintained aseptic during an operation.

I became well convinced a number of years ago that the use of the clamp of Keith or the serre-neud of Kœberle for controlling hæmorrhage from the neck of the uterus was based upon the idea that the spiral or curling branches given off from the uterine arteries really penetrated the tissues of the uterus, including its cervix. Some seven text-books on anatomy which I have examined state that these branches penetrate the uterus. I have a number of times, with fingers on the broad ligaments and their contained vessels, cut directly through, seizing the spurting vessel and securing it later. I have also peeled off the uterine arteries from the sides of the uterus and then cut off the cervix with little or no hæmorrhage.

These studies were for the purpose of reducing the number of ligatures,¹ long or short, to become incapsulated or slough off, through the vagina, and also to economize the time for their thorough application.

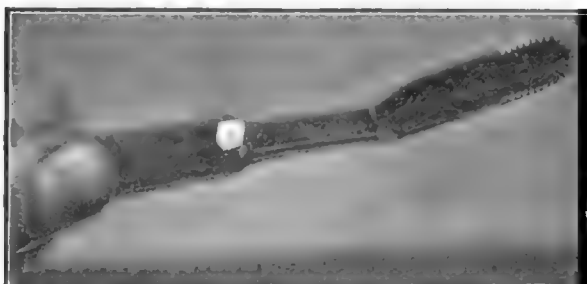
Here is a nodular mass fed and nourished by a capsule—a capsule containing the venous and arterial papillaries. It is well known to every gynecic surgeon that these nodules can be peeled out of the capsule without ligating a single artery. What I have stated regarding the nourishment of this nodule by its network of capillaries and not by the penetration of the arteries, for surgical purposes, holds true with reference to a uterus disorganized by a fibroid tumor or tumors no matter how large or how small; not only of the fibroid uterus, but the normal uterus as well; not only of the uterus but its entire cervix down to the external os.

I here present a specimen (see p. 554); and to my mind it marks a new era in the removal of fibroid tumors by hysterectomy, for the reason that the uterine arteries were not ligated at all. I went down between the uterine arteries and the uterus. The uterine arteries were absolutely left within the pelvis of the woman, not a single ligature being used except those

¹ A ligature to secure the uterine arteries will often secure a certain amount of muscular and connective tissue, and is one of the possible sources of infection of the wound; hence the importance of having as few ligatures constricting tissue in this work as possible.

which tied off the ovarian arteries and a small section of the upper portion of the broad ligaments.²

Then in addition to solving the problem as to what to do with the pedicle, by deciding not to have any, we also solve the problem as to what to do with the broad ligaments and especially their contained uterine arteries by simply leaving them in the pelvis of the patient.



In this case I simply controlled the circulation in the ovarian artery by ligating the upper portion of the broad ligaments with a strong ligature, then, cutting the broad ligaments above the ligature, began with this serrated gouge (see cut) to peel down the broad ligaments, keeping the gouge close to the tumor, being especially careful in the interspaces between the nodules not to puncture or tear the uterine artery, or any of its branches. From time to time nicking the edges of the peritoneum with these button-pointed scissors, with the serrated cutting edge, I pushed it forward under the peritoneum anteriorly and posteriorly so as to make anterior and posterior flaps. Then pushing with the serrated gouge, I carefully worked around the tumor until I had reached the uterine cervix, and then proceeded with still greater caution not to cut the cer-

vix nor its capsule, but to push it down, as I now slip my cuff toward my elbow with the fingers of my right hand. The enucleation of the lower portion of the uterus, including its cervix, reminds me of Professor Sayre's admonition when removing the head of the femur for hip-joint disease. He says, "I take this oyster knife and work my way past the trochanters major and minor, then make sure to get beneath the periosteum close to the bone." "Then," he used to say, "d—n the anatomy, stick close to the bone," and proceeded in peeling off the periosteum until he had the entire head of the femur out of the acetabulum.

As I reached this lower part of the cervix, my hysterectomy staff was passed up the vagina. I then removed the entire cervix, cutting a little opening on to the staff, slipping a strip of gauze in the fenestra of the staff. When the staff was withdrawn, this was brought down in the vagina, the upper portion of the gauze being packed into the pocket from which the cervix had been enucleated. The flaps which I had dissected off from the tumor and cervix were brought together by buried suture over the ligatures which had included the ovarian arteries, so that their raw ends also came into the wound. Several rows of buried suture were used, so that all raw edges made by peeling out the cervix were deeply buried so as to prevent leaking into the peritoneal cavity, the gauze being dragged down into the vagina a little each day, facilitating perfect drainage in that direction. This operation is the realization of the ideal. Heretofore, all of us had simply been idealizing the real. In a lecture delivered in July, 1893, I closed with a series of conclusions. From them I quote the third, to wit: "Where the neck of the uterus remains small, abdomen not too fat after the ovaries and tubes have been tied off, the pedicle may be fastened in the lower angle of the wound and give satisfactory results." To this conclusion stated at this time I have this to add: Where such anatomical conditions exist, enucleation of the cervix can be done in less time than the manufacturing of a pedicle, the adjustment of the serro-nend and elastic ligature. Furthermore, abdominal fixation of the pedicle cannot be accomplished, in all cases.

It is to the class of cases where no pedicle can be formed to fix in the abdominal wound that I would invite the best-directed efforts on the part of those who have a heartfelt interest in this class of suffering women.

One's per cent. of recoveries would undoubtedly be much better if, after making a careful examination which discloses a tumor deeply imbedded in the pelvis, we would discourage operative procedure; but in my first 100 hysterectomies I found a number of cases were gangrenous tumors and tumors containing gangrenous nodules, causing slow death in some cases and rapid death in others from septicæmia. Within the last six months I have operated on seven women who had either gangrenous fibroid tumors or fibroid tumors with gangrenous nodules. In five of the cases the nodular masses were deeply imbedded in the pelvis, and two of the cases were operated on within one week. In each case a nodule as large as a coconut was completely imbedded in the broad ligaments, having been developed from low down on the side of the uterus, and in both cases the nodular masses were in an advanced state of gangrene, they having caused temperature ranging from 100° to 103°. In two other cases the subserous tumors had become gangrenous

² Sauter, of Constantine, Germany, three-quarters of a century ago removed the uterus by the vagina without clamp or ligature (See article by Dr. Guido Bell, *Indiana Medical Journal*, February, 1894). Further, the enucleation of the cervix by the vagina was made by Langbeek in 1813, by Recamier in 1829, and by Malgaigne at a later date (See article by Dr. Robert Rayborn).

from small twisted pedicles. In each case rapid and well-pronounced septicæmia threatened the life of the patient. Surely, the technique of suprapubic hysterectomy is not complete until guided by sound surgical principles. We have methods and means for this class of cases. I am pleased with the rapidity with which we can ligate the upper portion of the broad ligaments, cut the same loose from the tumor, peeling the peritoneal covering off from the tissue, leaving a little subserous tissue beneath it, enucleating nodular masses, and directly find ourselves down on the uterine cervix close to the external os, with only an occasional bleeding from some enlarged arterial twig.

The most serious question in my mind in these cases is how to properly drain the cavities from which these nodular masses have been enucleated. In a recent case I packed the cavity in the broad ligament, from which I had enucleated a gangrenous mass as large as a cocoanut, with iodoform gauze, bringing the same out at the side of the pedicle which I had fixed in the abdominal wound. In addition to the gauze, I placed a metallic drainage-tube well down into the pocket. I wished to be absolutely certain that this cavity was thoroughly drained, believing that in other cases where I had trusted to gauze alone for drainage it was not satisfactory. In the first forty-eight hours we pumped out of this drainage-tube fully a pint of black blood, which, coming from the cavity occupied by this gangrenous nodule, gave a considerable odor, notwithstanding the thorough washing of the cavity through the drainage-tube. I believe it would be better in such cases to secure the most thorough vaginal drainage—not only through the opening made by the enucleation of the uterine cervix, the same being packed with gauze surrounding a drainage-tube, but by making a free and direct opening from the bottom of the cavity in the broad ligaments into the vagina. It has been taught that the danger of removing cysts or fibroids from the broad ligaments lies in the disturbance of important plexuses of nerves. My observation leads me to believe that the shock is not materially great in such enucleation, and that the bad results following such operations are due to the use of drainage which does not properly drain. But while I secured the most perfect drainage in the case referred to by bringing the drainage-tube up to the side of the pedicle, I would not advise abdominal fixation of pedicle in cases where nodular masses are enucleated from the broad ligaments and even imbedded in the region of the cervix, where we would form a pedicle, believing that these cases can be treated more successfully by removal of the entire cervix, with free vaginal drainage.

As I suggested at the beginning of the paper, one of the great objections to the total extirpation of the cervix and vaginal drainage is that we make an additional wound and have a possibility of vaginal infection. I concede, further, that it is not always possible to render the vagina surgically aseptic. . . . In a large per cent. of cases, however, a thorough washing of the uterine cavity, packing the same with iodoform gauze and then stitching the external os will prevent any purulent fluid from escaping into the vagina during our handling of the tumor. Then, thoroughly washing and even scrubbing the vagina with a brush and packing the same (including all its cul-de-sacs) with iodoform gauze, will give us a reasonable assurance that this tube has been made aseptic and reduces

the dangers of infecting the peritoneal cavity to the minimum.

In a conversation with Dr. Bantock, of London, I expressed the hope that in the near future we would be able to remove fibroid tumors with the same low rate of mortality which follows our work in removing ovarian cysts. He replied: "This can never be done, for the reason that the anatomical conditions are essentially different." Carefully reflecting over this statement, I have become thoroughly convinced that a more thorough study of the essential anatomical conditions which exist in an abdomen containing an ovarian cyst would enable us to bring the rate of mortality of the two operations to something approximating equality.

I have a number of times left the greater portion of the uterine arteries to remain in the pelvis of the patient; but from the results I had, I was thinking that the possibility of infection through the rich chain of lymphatics at the side of the uterus was greater in such cases than where broad ligaments were thoroughly constricted by ligature all the way down to the opening in the vagina. This led me to prefer cutting around the cervix to enucleating it. But carefully reflecting over the statement of Dr. Bantock that the anatomical conditions were essentially different in fibroid tumors from what they are in ovarian cysts, I have become convinced that we often find fault with the technique which we have used in treating the pedicle when the cause of death ought to be explained in some other way. For example, when the parietes of the abdomen are rendered thin by pressure of an ovarian cyst, the blood-supply is reduced so that all the intra-abdominal viscera are more or less anæmic. This condition is in marked contrast with the hypernutrition often present in and about the pelvis which contains a fibroid tumor. I am quite sure that deaths occur in consequence of our almost losing our heads in the determination to make the pedicle and all pertaining thereunto as perfect as possible, and neglecting perfect approximation of the abdominal incision, always as long as the tumor, including its peritoneum. I have many times cut through two inches of fat to reach a fibroid tumor, and unless such a wound be thoroughly closed by three rows of sutures, the internal one being fine silk with stitches not more than one-fourth of an inch apart, and then making absolute serous approximation, there is danger of infecting the peritoneal cavity by the wound leaking into the abdomen. Too often we take extreme precautions to nicely adjust the outer integument when it would be better, if any leakage from the wound is to occur, that it shall pour outward, and not inward. Again, the more vascular condition of the peritoneal cavity and its contained viscera in cases of fibroid tumors, as compared with ovarian cysts, warn us of the greater intolerance of rough manipulations, making it necessary to protect intestines and viscera as much as possible during operation by hot sterilized towels or sponges, by temporarily bringing the wound together over the intestines with a temporary stitch or vulsellæ, and, above all and over all, by the most thorough irrigation of the peritoneal cavity with water at a temperature of not less than 110°, not only after the work has been completed, but at intervals during the work, so as to undo the harm we do to the vaso-motor nerves distributed to the pelvic and abdominal viscera. Half-a-dozen pitchers full of water are none too many; and if we

have produced material shock, as evidenced by the pulse, a few pitchers of water poured through the drainage-tube and allowed to pour out again has at times, as I believe (permit me to say, I absolutely know), saved lives that otherwise would have been lost. The operator of to-day who seeks to do away with the "wash-out" and the drainage-tube on all occasions, on theoretical grounds, is rolling the wheels of progress backward. The skilful management of a patient during shock is of very great importance indeed. The use of opium to put the disturbed tissues at rest has the genuine ring of surgical wisdom. The use of strychnia to keep up the tone of the nerves distributed to the intestinal tract, and thereby counteracting the tendency to gaseous distention of the bowels, is one of the precious comforts to the anxious abdominal surgeon when his patient is low in shock.

When Ephraim McDowell made his first ovariectomy, the citizens surrounded his house threatening his life because he was about to "butcher a woman." The sheriff of the county interfered. At first they refused to listen to his pleadings for the doctor's life. Finally he struck a compromise, the mob agreeing to let the doctor alone if the woman recovered, the sheriff agreeing not to interfere if the woman died. This was a crucial test of the doctor's heroism. Other heroic surgeons for years did not hesitate to remove ovarian cysts, but allowed women to pass on to their graves if the diagnosis convinced them that it was a fibroid tumor. Still later surgeons removed fibroids if they were pear-shaped and a pedicle could be easily formed, allowing women to pass on to their graves if the examination showed the tumor deeply imbedded in the pelvis by nodular masses. Even the great and noble Dr. Thomas Keith, after battling with fibroid tumors with as good a percentage of recoveries as any one at that date, finally abandoned fibromectomy, resorting to the use of electricity, and only wished that he had back from their graves the patients that had died from his operations for fibroids. Thank God there were others to take up the work when he became discouraged. The old adage that the qualifications of a surgeon were "the head of an Apollo, the eye of an eagle, the heart of a lion and the hand of a woman," is eminently true, especially as regards him who would seek to be successful in removing fibroid tumors. The head to plan and to meet the surprises which spring on us during such work; an eye to see quickly the exact constriction of every ligature and adjustment of every suture; the lion heart to forge forward in this aggressive work when our percentage of recoveries might be better if we would let fibroids alone, especially bad ones; the nimble wit in the end of the fingers, backed by an indomitable will to skilfully and speedily perfect the last suture with the same precision as the first, make a combination of qualifications suggesting that the surgical type of a man is not to be found thirteen times in a dozen.

No operation so thoroughly demands that the trinity of surgery be carried out—thorough preparation of the patient, thorough operating, and skilful after-treatment. As American surgeons we have a right to be proud that no other nation leads us in the originality of methods or successful results in removing fibroid tumors. Almost every State of our Union has operators who would venture to give a woman with a fibroid tumor the chances of life which surgery offers. With a more thorough and perfect understanding of the

essential anatomical conditions which make an abdomen containing a fibroid tumor different from one containing an ovarian cyst, with the realization of the ideal method applicable alike to all fibroid tumors regardless of their morphology, a method as successful in the hands of the many skilled operators as the few, may we not hope to say with all sincerity that fibroid tumors can be removed with the same low rate of mortality which has placed ovariectomy among the brilliant triumphs of the century? Then shall the torch lighted by McDowell in the midnight darkness shine forth with resplendent glory in this brilliant noonday of abdominal surgery. The century which in a few years will have rolled on to the eternal past, has placed in the magnificent temple of medicine many pillars of surpassing beauty and grandeur, while its surgical columns have risen high toward Heaven, where as gilded towers, they fain would vie with the God-given sunshine in dispelling the chill and gloom of human agony.

Chirurgia's tower, thy lights resplendent blaze,
Dries woman's tears and lengthens out her days.
McDowell and Sims, of our Columbia's clime,
Began the work moved onward high sublime.
To woman then, these blessings shall be given,
Queen of the home and home the type of Heaven.

Abdominal surgery is proud of her past because it is prophetic of her future. Even now in the vital present it shall stand forth unchallenged as the crowning glory of all science and of all art.

ABSTRACT OF PRESIDENT'S ADDRESS

BEFORE THE AMERICAN LARYNGOLOGICAL SOCIETY,
AT ITS SIXTEENTH ANNUAL SESSION, WASHINGTON, D. C., MAY 30, 1894.

BY D. BRAYSON DELAVAN, M.D., NEW YORK.

In opening our Sixteenth Annual Congress let me heartily welcome you to what gives every promise of being a most useful and enjoyable meeting. The support which you have given it, both by your presence and the scientific contributions provided, has been spirited and generous; and I am assured that you will still further co-operate with me in carrying it through to a harmonious and successful close. Surely the experiences in sixteen years should give light to illuminate for us the present and enable us to look forward somewhat into the future. In trying to forecast the future it is eminently right that we should indulge in retrospect, particularly for the benefit of many who may have but recently come among us and to whom our early history may be unknown. I shall aim therefore to go back with you to the early history of this Association.

[The President then gave a detailed account of the various factors which led to the formation of the Association. Special honor was paid to the preceding work of Horace Greene, who was the pioneer specialist in this country in diseases of the throat, and whose works now prove that he led the world. He died, however, before this Association came into existence; but he left behind an able and brilliant successor in Elsberg, under whose presidency the Association was formed at Buffalo in June, 1878.]

THE SOCIETY'S AIM.

The labors of Elsberg and his contemporaries in the formation of this Society were a preconceived move-

ment in the direction of a higher and broader education, and were an intelligent and vigorous effort to advance and disseminate the knowledge of our special work. How faithfully this primal aim has been carried out our history attests by its annual meetings, publication of transactions, encouragement of special literature of our department by the bringing forward of youthful aspirants for laryngological fame, and by the practical study of the best methods of instruction in our schools. New York city was the place, the autumn of 1873 the time, and Dr. Clinton Wagner the promoter of the first society ever founded for the exclusive study of laryngology and rhinology.

[Attention was directed by the President to the formation of various special foreign societies and the vast increase in the number of organizations in this country whose attention is entirely devoted to these branches.]

It is a great satisfaction that this strong onward movement should have been headed, and at so great a distance in advance, by this country; and it is surely not unpardonable that we should in the enthusiasm of the time express ourselves as the occasion warrants. But if we are still to be an example to the world, we must still strive for superiority. The place which we have won must be held, not through vain-glory, but through increased diligence on our own part and an ever-broadening receptivity to the ideas of others.

GROWTH OF SPECIAL LITERATURE.

Our Association is intimately related also to another important educational factor. Special journals have now become quite numerous, and our own work receives a generous and constantly growing appreciation in the columns of our general medical journals. The establishment of the bibliography of the earlier laryngology was largely the work of several of our Fellows.

THE ASSOCIATION'S MOTTO.

"Docendo discimus — by teaching we learn."

If we are to reach the higher usefulness, we must ourselves be teachers. The question of education as related to our own department is by far the most opportune by which our attention could possibly be engaged. Therein lies the hope of the future as to our own reputations, and, what is still more, as to the beneficent ends to which we fondly hope our specialty may attain. The problem of instructing undergraduates may be said, in this country at least, to have been squarely met and fairly solved. One of our institutions particularly is of conceded superiority, both as to its plan of instruction, equipment and general discipline. But other schools as well are doing creditable work. All the problems, however, can never be solved by undergraduate institutions, and to meet the new needs there have sprung up the various so-called post-graduate schools. The task of the teacher in this field is more difficult, for the needs of his classes are far more varying than is the case with the undergraduate. His students are men of some experience in general practice, of a wide diversity of preliminary education; and they are frequently hampered by preconceived ideas. They often have much to unlearn before they can grasp fully the salient points as to what the science of laryngology really is; hence the greater difficulties of the teacher's task. But the theory of graduate instruction in this country is an established and triumphant success, and it may well be the province of this Association to discuss how we can best

infuse the ferment of sound learning into the unleavened but well-promising mass of students who come to our graduate schools. Three things seem demanded to bring about this desired result: first, a higher and more thorough general medical education on the part of the student; second, more careful selection in the choice of instructors; third, a modification of the best undergraduate methods to satisfy the needs of the older men.

A FINAL WORD.

When this Society was formed laryngology was in the hands of a few men, who, under the stimulating influence of the earliest enthusiasts, formed a veritable aristocracy of learning. Now it is changed. The spirit of socialism has been among us; that noble and generous socialism of science which, having acquired a rich and rare possession, desires to spread it broadcast and with lavish hand to the four quarters of the earth. The old order of things under which our specialty was held in the hands of a few has passed away.

Original Articles.

THE OBSCURE ORIGIN AND INDETERMINATE COURSE OF ACUTE INFECTION, AS ILLUSTRATED BY A CASE OF MALIGNANT ENDOCARDITIS.¹

BY J. S. GREENE, M.D., OF DORCHESTER, MASS.

In the near past, when the theory of infection now in vogue was first authoritatively set forth in its full and fascinating proportions, it seemed as if there could no longer arise cases of doubtful nature or uncertain origin. The so-called spontaneous development of infectious maladies in man apart from any ruling epidemic was artificially paralleled by Bouchard when he provoked in healthy animals, without wounding, the rapid appearance of microbes in the blood, by the application of depressing causes such as cold, fright, fatigue.²

By the action of such commonplace influences the pathogenic bacteria which inhabit our cavities, and which ordinarily remain harmless, are enabled to penetrate into and multiply in the fluids. It is thus that infectious diseases become generalized or aggravated in the system, and set up the phenomena of septic fever.

Some of these phenomena are headache, pain in the back and limbs, secretory disturbances, coma, convulsions, delirium; and perhaps there must be added to this already formidable train, paralyzes, both of peripheral nerves and of nerves proceeding from the bulbar centres on the integrity of which the instant life depends.

We are no longer permitted, as in the beatific past, when bacteria were not in sight and ptomaines were not even suspected, to talk of brain fever when the septic process is chiefly determined to the cerebral functions, nor of rheumatic fever when the back and limbs receive the rebound from the shock of poison dealt to the trophic nerve centres. Still traces of what was our state of blissful ignorance remain, and in the light of later knowledge show as black spots on our sunshine. Cases yet arise where a disease ultimately determined to be of infectious origin masks

¹ Read before the Boston Society for Medical Observation, March 5, 1894.

² *Theorie de l'infection, verhandlungen des x internationalen congresses*, s. 1. 49.

itself behind groups of symptoms capable of being quite otherwise interpreted. The infectious agent, whatever microscopic form it takes, induces a septic fever, which acts with varying intensity and by multi-form combinations on the nervous system and on different organs and functions. Soon or late, the integrity of some important organ may be steadily invaded, or an acute inflammatory process may be localized in some tissue; and whether these complications occur or not, the phenomena of septicæmia, pure and simple, may dominate to the end. Again, the infection rather than the localization may have had the minor rôle, proceeding without the ranges of temperature commonly associated with septic processes. Nervous disturbances apparently or manifestly functional may prevail over either thermic or adynamic, to that degree that when the disease finally becomes localized by signs or symptoms ordinarily unmistakable, these signs and symptoms are misinterpreted because disconnected from their customary relationship.

Material for cultures is not always attainable during the course of the disease; and when a fatal issue has not been averted, and when the pecuniary or vital wants of survivors combine with the scientific interest of the physician to seek what of verity autopsy may reveal, the early solicitude of the funeral undertaker to preserve the integrity of the mortal remains by the injection of poisonous chemicals will probably have interposed an effectual barrier to the inquiries of the bacteriologist and the microscopist.

A fatal case of disease of infectious origin simulating multiple neuritis, but proven by autopsy to have been acute endocarditis, supplies the clinical material to illustrate the foregoing remarks.

The case was that of a man thirty-four years of age, by occupation a letter-carrier, and thus exposed to the influences of cold and fatigue. His father died of typhoid fever; his mother survives in impaired health, with signs of cardiac trouble. There is no family history of rheumatism. The patient was about five feet four inches in height, spare in flesh, nervous temperament, good habits. At the age of thirteen, after the shock of a fall and exposure to wet, he had a prolonged attack of inflammatory rheumatism with cardiac and pleuritic complications; but recovery, though slow, was complete, and for twenty years thereafter he had no illness requiring medical attention. A less satisfactory state of health dates from about a year ago, when he yielded for part of a week only to an attack of gripal influenza. Following that came annoyances of nasal catarrh and anal fissure, for which troubles he sought relief as a hospital out-patient. These ailments, and a cold pain, as he termed it, above the left hip, accompanied noticeable diminution of strength. Early last November a widowed sister living with him died after a brief illness, leaving two orphan children to his charge. Soon after this event, prodromic symptoms began, and for two months continued to accumulate. These symptoms were lessened appetite; frequent perspirations; pains in shoulders, legs and soles of feet; cold throat; stiff and tired ankles, worse in morning. His urine had been remarked habitually thick.

During the week previous to the final yielding to illness, his nights were marked by sweats, and by cold, restlessly-moving feet; and he remained in bed two days before going again upon his route. In the night of Sunday, January 14th, he aroused the family by a scream of pain, and said it was as if his two feet were

cut off. Pain lasted all night, yet he went to work Monday, but ate no dinner. While delivering, pains caught him, first in chest from side to side, passing to back of legs below knees; and he returned home with stooping shoulders and limping gait. Nevertheless, that evening he walked half a mile and back to consult a doctor, and got a tonic. Tuesday, the 16th, he put his last day's work between two restless nights. Wednesday morning, the 17th, at 3 o'clock, he arose and went down stairs, unable to rest from pains in sides and chest, in legs and in feet. That day a physician was summoned. The patient complained of stiff cords around ankles and numbness of soles. Thursday, red streaks were seen on the feet. The hands and arms had become painful, and the abdomen was hard. Friday, the jaws and the back of the neck were involved in the suffering. The history to this point is gathered from patient and his mother.

I first saw him on the evening of Saturday, January 20th, in consultation; and at the joint request of physician and patient, I became associated with the former in the guidance of the case. The patient was lying on his back, with an aspect of helpless unrest, talkative and moaning; his countenance expressive of anxiety. The pulse was 104, fair quality; respiration 26; temperature 101.2°; tongue clean, but dryish; thirst. He complained of shooting pains down the thighs and legs, of burning tenderness of the outer and inner aspects of thighs, and of numbness of the soles just anterior to the heels — all dating from Wednesday; of pains in the arms (especially about the elbows), with numbness of the two outer fingers of each hand — from Thursday; of pain in the lower jaw, below articulation on each side — since Friday; of concurrent pain about the region of the lower ribs on each side, especially the right. On examination, there was no redness nor swelling of joints nor elsewhere. The tenderness elicited by touch was regional, not following the course of large nerves nor in joints; especially noted at the upper portion of the calves and at the anterior surface of the soles, including toes, especially of right foot. Other points or patches of tenderness to touch were over the ramus of the jaw on each side. Moving or flexing the toes caused pain. There was a degree of rigidity of the lower limbs, and of resistance to passive motion, and such motion caused pain; but the pain was vaguely localized, and not in joints. Hands and arms showed less rigidity and little tenderness. He moved the jaw with difficulty, complaining of pain below articulations. It was noted that the apex beat of the heart was in the mammary line in the sixth interspace; but there was no diffused nor heaving impulse, and the heart sounds were clear, unaccompanied by murmur and of normal rhythm, and so remained throughout. The plantar and patellar reflexes were absent. Albumen was absent from the urine, which was heavy with amorphous urates. The patient lived for ten days longer, and died the 30th of January.

During this period of daily observation, there was gradual abatement of numbness, of localized tenderness, and of muscular rigidity; no restoration of tendon reflexes; muscular wasting rapid and extreme.

On the 24th, it was noted that pains had appreciably abated within two days, and none remained in sides of chest. Patient could move limbs more easily, and open jaws more readily. He still shrank from touch at the plantar surface of the toes and adjacent part of the soles, and still kept the limbs rather rigid, espe-

cially his hands and arms, with fingers spread apart, moving and flexing like one slowly scratching.

On the 25th, he sat on the edge of the bed a few minutes after passing urine.

On the 26th, there were painful and unsuccessful attempts at micturition, a resort to the catheter, and (later) successful voluntary effort. This day tenderness to touch and numbness were all gone. A few petechial spots were seen on the legs. He still kept a certain rigidity of joints on passive movements, as if fearful of hurt, but could relax and move painlessly. The type of fever became more and more distinctly typhoidal, the tongue more dry and furred; no sordes. Delirium of sufferings and of travel, active at first, became somewhat more quiet. He wandered all over the country and encountered all kinds of trouble; he never knew where he was, but was sure he was not at home, though he got almost there; yet he knew every one about him. He had occasional "wild spells," when he wanted to get up and off, but had little strength to exert. There were moments of quick, labored respiration, but not often; scarcely any cough.

His temperature had no regular oscillations, but ranged oftenest from 100.5° to 101.5°; but the morning of the 23d it reached 103.5°, and the evening of the 24th and the following morning it was 103°. The pulse generally went with the temperature, though not invariably; it varied between 104 and 120, reaching (exceptionally) 130.

The last day I did not see him; but there was choking on attempts to swallow, collapse with cold sweat, and he died with gradual heart-failure.

Dr. Wm. T. Councilman performed an autopsy, Thursday, February 1, 1894: "Anatomical diagnosis, acute endocarditis of aortic and mitral valves. Body of medium size, slightly built, somewhat emaciated. The body had been injected by an undertaker, so that little could be told of the degree of congestion, etc., of internal organs. The peritoneum was smooth, and there were no lesions in any of the abdominal organs. The spleen was large and rather soft. Both lungs slightly adherent. On section, a slight muco-purulent secretion in some of the smaller bronchi. The heart was of ordinary size, the cavity of the pericardium obliterated by adhesive pericarditis. Myocardium pale and easily torn. The valves of the right heart were normal. On the aortic valves, just along the line of closure, there were numerous projecting granulations. The valve about the seat of these vegetations was thickened. Similar vegetations were along the free edge of the mitral valve, and in one place extended over the auricular surface of the valve up to the auricle. The tissue here was thickened, infiltrated, and small ecchymoses were here and there visible. The nerves of the lower extremities were removed for examination. Owing to the injection of the undertaker, bacterial cultures which would probably have thrown much light on the case could not be made. I think there is little doubt from the character of the lesions in the heart that there has been an infection with either the *diplococcus pneumoniae* or the *streptococcus*."

The result of this autopsy was the revelation of an unsuspected seat and form of localized inflammation. True, the chief signs and symptoms on which a diagnosis of infectious neuritis was founded had gradually abated during the week which followed my introduction to the case. On the other hand, the group of symptoms representing septic infection had kept their

unrelenting sway, dominating and supplanting, while no signs were detected nor symptoms intruded to draw attention to a lesion of cardiac valves.

Thus, prior to the autopsy, there still remained the possible alternative that death was wholly due to the effect of the toxins of infection acting on the higher nerve centres. The inference that such was partly the case, that the cardiac lesions were in fact subordinate in determining the manner of death, derives support from the symptom of occasional rapid, labored breathing, and from the paralysis of muscles of deglutition noted some hours before death.

The temptation is here presented to follow to their natural conclusion these observations on the uncertainty attending the origin and course of acute infection, by some reference to like uncertainties in the fatal ending.

This final point can be illustrated by a case of possible multiple neuritis comparable to the foregoing one, but introduced here only in synopsis. It was the case of a young man of remarkably neurotic constitution by inheritance, whose father and two paternal relatives had died suddenly in acute agony — two of them with precordial pain, the third (a girl of sixteen) of toothache, so-called. An autopsy on the father showed no disease of brain, heart nor kidneys. The son had been pushed to the verge of nervous break-down by overwork and use of tobacco; still further depressed in his vitality by two illnesses supposed to be *la grippe* — one marked by semi-stupor, numbness and bad head, the other by vomiting, headache, pain of back and limbs, and rigidity.

He is out for an evening's enjoyment, perhaps gets chilled, has next morning a convulsive seizure, nearly or quite unconscious, some fever and transient albuminuria; five days of disability with spinal and lumbar pains. Another seizure; nine more days of suffering, involving legs as well as back. Another seizure; pains more torturing, and involving arms and somewhat chest, as well as back and legs. After six more days an agonizing pain in head aroused by a trivial cause; a distressful, restless, but not usually painful head throughout; and finally a sudden snap, and death after twenty-two days' illness.

No autopsy was permitted. The outset of the illness was very peculiar, some of the indications during its course equivocal, one period reassuring and thereby misleading — other periods absorbingly distressing, and the termination unexpectedly sudden.

It was undoubtedly a case of acute infection, and its phenomena can perhaps be explained either on the theory of multiple neuritis or through the action of toxins on the nerve centres, without the existence of localized microscopic lesions. What concerns us here is the question how death was induced.

In the *Revue de Médecine* of February 10, 1891, Dr. Havage, of Paris, reports a case of alleged acute infectious neuritis, in the course of which, and following the abatement of fever, there occurred numbness and pricking, and then extensive paralyses involving not only the limbs but the facial muscles and some of those concerned in articulate speech, and finally the right external muscle of the left eye, inducing strabismus and diplopia. Nevertheless, in a month from the onset of the disease recovery from these paralyses was nearly complete, and the entire restoration to health was not delayed to the end of the second month. Those who cannot share the sanguine belief of Dr. Havage that the case was one of multiple neuritis —

a belief that seems scarcely consistent with the general observation of the length of time needed to effect repair and restoration of function in nerve tracts which have been the seat of an inflammatory process — must necessarily regard these formidable paralyses as transitory effects of the toxins of infection.

If, then, such toxins can cause extensive paralyses of peripheral nerves without the aid of inflammation, there is little difficulty in perceiving how they may also, by their depressing, irritating, or paralyzing influence on nerve centres, determine death in various forms, by heart-failure, by asphyxia, and even by pain and shock. Also it is obvious how important must be the influence of family constitution and personal idiosyncrasy in shaping the fatal issue. A single sharp agony sometimes ushers in an attack of localized neuritis; and pain in the head or chest or elsewhere was a notable feature at the critical points in the history of the family to which I have referred. Was there a correlation between these two facts, or did ptomaines alone cause pain enough to kill? What changes do toxins effect in the nerve elements, to induce now lingering, and again sudden, death?

The questions may not be answered; but the asking serves its purpose of illustrating the obscurities still so often attending the termination, as well as the origin and course, of acute infection.

CRYSTALLINE DEPOSITS IN THE URINE: THEIR CAUSATION AND RELATION TO RENAL DISEASES.¹

BY EDWARD M. GREENE, A.M., M.D.

(Concluded from No. 22, p. 541.)

CASES of oxaluria and uric-acid crystals, associated with more or less dull pain in the lumbar region, are familiar to all, and require no further comment other than to emphasize the importance of a microscopical examination of urine, in order to differentiate them from lumbago, muscular strain or uterine disease. There are rare cases, however, in which there occurs a sudden precipitation in the kidneys of a large amount of crystals, causing agonizing pain fully as severe as that produced by calculus. In these cases it has been supposed that a stone was actually passed, but was not found on account of careless observation. This, I am convinced, is not always the case. I have had an opportunity to study this interesting condition in two cases, which I will relate.

Mr. R. F., a chemist, age thirty-one — pale, of a nervous temperament, rather below medium weight, but of good muscular development, of good habits, family history negative — had previously passed two life-insurance examinations, but recently had been under considerable mental strain from family troubles, and suffered considerably with dyspeptic symptoms. In August, 1891, he had been taken suddenly, for the first time, with severe pain in the abdomen and lumbar region, but recovered after one day's treatment with morphine and cathartics.

The physician who had charge of him at that time did not examine the urine, but thought that the colic was connected with constipation. In the next two months he had similar, but not very severe attacks.

I saw him first on November 19, 1891, three months

after the beginning of this trouble. The pain in this attack began while he was at work in his laboratory, and rapidly increased in severity, so that he had barely time to get home and into bed before calling me. I found him groaning apparently in intense agony, and at once gave him one-quarter of a grain of morphine hypodermically, repeating it about an hour later. Pain was most severe in the right lumbar region, extended down the abdomen in the direction of the ureter to the bladder. There was considerable pain also in the left lumbar region, and tenderness on pressure on both sides. The skin was moist and pale, and the pulse about 60. Expression was worn and anxious, and he was constantly nauseated and had severe vomiting. Morphine was continued as necessary, and the pain gradually wore off and disappeared entirely in four days. There was no increased frequency of micturition. The first urine passed after the pain began was of a high, slightly smoky color; acid; specific gravity 1.028; one-tenth per cent. of albumen; sediment considerable in amount, and consisted of considerable altered blood, excess of mucus and leucocytes, and numerous calcic-oxalate crystals. Under the use of alkalies and a large amount of water the calcic oxalate disappeared in a few hours, and the blood and albumen two or three days later.

On November 28th the urine was alkaline; specific gravity 1.025; free from albumen, blood or casts, but there was a slight increase of leucocytes and mucus. December 2d, urine was high-colored, strongly acid, specific gravity 1.027, no albumen, but a considerable sediment consisting of calcic oxalate and mucus shreds. December 5th, there was no albumen, and a few leucocytes only in the sediment. The urine was all saved and examined before being thrown away, and never contained calculi or even gravel large enough to be seen by the naked eye.

December 29th, I was summoned by a carriage to come at once to his place of business, and found him in another severe attack. He had not had time to get home, but was lying on the floor in great pain, vomiting, and almost dazed. I injected morphine subcutaneously, and drove at once with him to the Massachusetts General Hospital, where he arrived almost in a state of collapse, rolling about with the pain, in spite of one-half a grain of morphine given subcutaneously. Pain was located principally in the back, just below the twelfth rib on the right side, from which it would shoot occasionally down to the right testicle in a line corresponding with the ureter. There was less severe pain in the left loin, but both sides were tender on palpation. There was no evidence of floating kidney. Pulse was 50, small and weak, but regular. He was given one-eighth of a grain of morphine every two hours and a poultice applied. The pain became gradually less, and almost disappeared after two days. Unfortunately, the first urine passed was not preserved, and in the hospital history there is no record of the urine, except that on December 31st it is stated that the "urine shows no constant crystalline sediment." On January 9th, an examination of the urine was made by Prof. E. S. Wood, as follows: "Color normal, acid, 1.019, urea and uric acid normal, albumen very slight trace, sediment slight, and showed a few hyaline and finely granular casts, some of large diameter, probably from the straight tubules." During his stay in the hospital no calculus was found, nor any gall-stones in the stools. The pulse ranged from 50

¹ Read before the Boston Society for Medical Observation, March 5, 1894.

to 60, but during the last four days from 60 to 70, and the temperature from 98° to 99°.

As there was no evidence of stone in the kidney, he was discharged well January 9th.

I did not know the secret of the patient's mental and physical condition until he asked me to testify in divorce proceedings on July 1, 1893.

It seems that some six months before these attacks began he had married a young woman on only two weeks' acquaintance. She was a public singer, and, according to her own admission, she never once allowed her husband any sexual connection, on the ground that pregnancy would spoil her figure and hurt her voice. She slept with her husband constantly. I testified that this state of affairs had brought on neurasthenia, melancholia and dyspepsia, which predisposed to the formation of calcic oxalate, and that his constant ungratified sexual desire tended to increase the hyperæmia of the kidneys. No contest was made, and the judge granted absolute divorce.

He did not return to his wife after leaving the hospital, and never had another attack. He has also gained ten or fifteen pounds in weight, and now feels perfectly well.

The second case I had a good opportunity to watch, as he was under observation at my own house during two of his attacks. The patient was a young business man, aged twenty-nine, married, of good family and personal history, strong and well-developed, of average weight.

His first attack occurred without any previous warning at 6.30 A. M. on July 3, 1891. This pain, which was severe, was in the left lumbar region, and lasted all day. The treatment was morphia injections.

The second attack was milder, lasting only a few hours, and occurred some six or eight months later. The physician then in charge was said to have been puzzled how to account for the attacks. The third attack occurred under my observation December 3, 1892. The patient had been at work as well as usual during the day, but about the middle of the afternoon began to have a dull pain in the lumbar region. The pain gradually increased in the course of an hour, when the patient came to consult me about it.

Almost as soon as he reached the office the pain became severe, and I gave him one-eighth of a grain of morphia by the mouth. In a few minutes the pain was so severe that I gave him one-quarter of a grain of morphia subcutaneously.

This had no effect, and he was soon shrieking with pain and tossing about in agony. The skin was blanched and covered with perspiration, the pulse was 62. Pain was referred mostly to the right lumbar region over the kidney, and, to a less extent, to the region of the left kidney. The pain did not especially follow the course of the ureter, and there was no desire to micturate.

Both flanks were tender on pressure. Ether was then given and pushed to complete anæsthesia. On removing the ether after a few minutes the patient complained again, and more ether was given. In about half an hour the ether was again removed. The patient was very hilarious and happy in coming out of the ether, and said he had no pain at all.

He soon began to pass urine in large amounts. The first specimen passed after the attack was pale, acid, 1,018, albumen a slight trace (one-fifteenth per cent.), sediment considerable, and consisted of clumps

of small calcic-oxalate crystals imbedded in mucous shreds, a little blood, epithelial cells (probably from the pelvis of the kidney), and a few hyaline casts, some of which contained small calcic-oxalate crystals. The urine passed the next forenoon was perfectly normal, except for a few blood-globules.

Specimens examined occasionally for several weeks showed nothing abnormal. The entire amount of urine passed for several days after the attack was saved and examined by me, but no trace of calculus was found. In the previous attacks the patient is positive that he never passed a stone, although he watched for one constantly. There was apparently no exciting cause in this case, such as exposure to cold, over-exertion or over-eating. He never ate rhubarb.

On September 22, 1893, this patient had another similar attack. He suffered severely for nearly two hours before I could get to him and give him ether. The ether was kept up most of the time for four hours, when the pain entirely disappeared. During the next night the pain returned in a mild form for about an hour. The next forenoon he went to business at about ten o'clock, although he "felt as though he had been on a spree." The first urine passed after the pain was high-colored; specific gravity of 1,020; very slight trace of albumen; a considerable sediment, consisting of a large amount of calcic-oxalate crystals, singly and in microscopical concretions; considerable blood; and a moderate number of hyaline casts. No stone was passed, and a day or two later the urine was normal. The only cause I can find for oxaluria in this case is an habitually concentrated urine from drinking too little water. There was no evidence of floating kidney.

The treatment of these two cases during the paroxysms suggests to me the almost uselessness of morphia injections, in addition to their danger, and the remarkable success of ether in relieving the pain entirely and cutting short the attacks. The attacks in which morphia had been used were prolonged and painful.

The secret, it seems to me, is this: opium, according to Lauder Brunton, frequently lessens the quantity of urine; while, according to H. C. Wood and Brunton, ether stimulates the heart at the same time that it dilates the blood-vessels, increases very markedly the blood-pressure, and thus renders the peripheral circulation very vigorous. The abundance of urine and its low specific gravity after ether, in the second case just reported, indicate that by this means a large amount of water is at once poured through the renal tubules. Thus we get instant relief of pain and remove its cause at the same time.

The remarkable thing about these cases is the suddenness with which the crystals are precipitated and their rapid disappearance, together with albumen and blood. I have not been able to find any good account of similar cases. Dr. G. W. Allen read before the Suffolk District Medical Society in April, 1891,* a report of three cases of renal colic in which the pain exactly simulated that caused by calculi, but none were found. In his first and third cases no report as to the urine was made, and, in the second case, the urine was said to have been passed in very small amount during the attack, "not enough in all to furnish a specimen for examination, but it looked perfectly normal."

* Boston Medical and Surgical Journal, June 25, 1891.

During the next two weeks the urine was carefully examined, but nothing found to account for the attack. He was unable to make an exact diagnosis, but raised the question whether the symptoms might not be due simply to renal neuralgia.

Edes, in an article in "Pepper's System of Medicine," recognizes the possibility of the occurrence of renal colic not caused by calculi. He says: "Most physicians have seen cases when the same set of symptoms has not been followed either by the discharge of the stone per urethram or by the evidence of its continued sojourn anywhere in the urinary organs. They may occur in persons of a neuralgic tendency in connection with the uric or oxalic diathesis. If, after careful watching, no stone appears, and, on the other hand, the pain does not continue, and no pus gives evidence of pyelitis, it is highly probable that no stone is, or has been, present. A true neuralgia may undoubtedly exist."

My own opinion is that while neuralgia of the kidney is possible, that it is not a sufficient explanation for the very severe cases of sudden onset, short duration, and sudden termination. The five cases reported by myself and Dr. Allen were all in men, while it is in women that we are most likely to get neuralgia and hysterical pain. These cases I believe to be more commonly due, as Edes hints above, to irritation by crystals. In my cases it was only the first specimen passed that gave the clue to the true condition. The pain in these cases is usually in both kidneys, rather than in one, as is usually the case with calculi. It can be distinguished from the pain due to sudden obstruction of the ureter, as in movable kidney, by the fact that we get no evidence of movable kidney by palpation, by the presence of the crystals and by the occurrence of more or less pain in both kidneys. In gall-stones the pain is not exactly in the same position, and we soon get a jaundiced urine. It is a singular fact that in jaundice calcic oxalate is likely to be very largely increased. Fagge quotes Schultzen as having found as much as seven and a half grains of calcic oxalate in twenty-four hours in cases of jaundice. In other conditions which might be confounded with renal colic the onset of pain is not sufficiently sudden.

TREATMENT.

Bearing in mind the etiological factors considered above, the treatment required to prevent these crystalline deposits obviously consists in preventing the formation of uric acid and calcic oxalate in the system, and, secondly, in preventing their precipitation in the kidneys. The first result is to be gained by hygienic and dietetic measures, while the second requires medicinal treatment.

The hygienic measures consist of an out-of-door life, as far as practicable, exercise, and baths. The plethoric, high living, uric-acid victim, with his tissues crowded with waste material, evidently requires all the out-of-door exercise he can stand and warm baths to stimulate the eliminative action of the skin. The other class of debilitated, anæmic, neurasthenic subjects of uric acid or calcic oxalate are equally in need of fresh air to assist their feeble oxidizing powers, but we must be careful not to overtax their weak constitutions with too much exercise and bathing. In the consideration of diet it is especially necessary that digestion should be perfectly performed, failure in this respect causing more defective metabolism than could possibly arise

from a little more or a little less of some particular article of food.

Most persons are able to digest lean meat more easily than starchy, saccharine, or fatty substances. In the three latter classes of foods, if digestion is slow, fermentation is sure to occur and the resulting acids are taken into the blood, thus lessening its alkalinity and solvent power and interfering with all the metabolic processes. In the majority of cases, therefore, a diet containing a considerable proportion of albuminous material, supplemented by succulent vegetables, will be more easily digested than one in which the starchy and saccharine elements predominate. The diet must be carefully suited to each individual case. Stimulants of all kinds must be avoided. In cases of oxaluria we must avoid the ingestion of vegetable substances containing oxalic acid, such as tomatoes, sorrel, rhubarb, onions, turnips, cauliflower, and asparagus. The free use of pure water and of milk is extremely important. As we have already seen the urine containing crystalline deposits is almost always concentrated and highly acid. Water at the same time dilutes the urine and renders it relatively less acid.

Drinking hot water at bedtime acts very beneficially as a diuretic and gives a copious flow of urine in the morning—a point of importance, as Roberts and others have shown that uric acid is largely precipitated in the urine in the early morning hours.

The medicinal treatment to prevent the formation of crystalline deposits of uric acid differs from that required in oxaluria and will be considered separately.

We can, as pointed out by Roberts in his recent Croonian lectures, effectually prevent by medicinal treatment the occurrence of those conditions of the urine under which alone the formation of uric-acid crystals is possible. The immediate determining cause of the precipitation is excessive acidity of the urine and the essential indication of preventive treatment is to diminish the acidity.

Chemically it is impossible for uric acid to be deposited from an alkaline urine and not at all likely in a neutral or feebly acid urine. A study of the normal variation of the urine at different periods of the day and night leads to the inference that the liability to uric-acid gravel rises to a dangerous intensity only during certain limited portions of the twenty-four hours. The character of the urine has been shown by Roberts to be most affected by the digestion of food, by prolonged fasting and by sleep.

A meal, whether composed of ordinary mixed food, or of purely animal, or purely vegetable substances, produces two constant effects. It lowers the acidity of the urine and increases its volume. Conversely, prolonged fasting raises the acidity and diminishes the flow of urine. During the hours of sleep which are also hours of fasting, the acidity of the urine reaches its highest point and the flow of urine reaches its lowest point. The proportion of uric acid in the urine is highest during the time of sleep, but the hourly excretion is highest during the hours following a meal.

Obviously, therefore, the period when there is most risk of precipitation in the kidneys is during the time of sleep, and especially in the early morning, during the two or three hours before breakfast. In sleep, also, the horizontal position and the bodily repose make the urinary stream more sluggish and predispose to crystalline precipitation. On the other hand, during the day and the waking hours the recurrence of the

meals keeps the urine at a low degree of acidity, or even renders it for a time neutral or alkaline, while the renal stream is comparatively full and rapid, and its descent from the kidneys is favored by the force of gravity. It is, therefore, only during the critical period of the latter part of the night that medicinal treatment is required. In the milder cases a single full dose of one of the alkalies taken at bedtime suffices to prevent the formation of uric-acid concretions. For this purpose the citrate of potash is, perhaps, the best preparation to employ. The dose for an adult is from forty to sixty grains, dissolved in a few ounces of water. In severer cases a second but smaller dose should be taken during the night.

Haig has shown also that salicylate of soda has a decided influence in increasing the excretion of uric acid. Phosphate of soda is at the same time a good alkalizing and laxative agent. It is also, as we have seen above, the principal natural solvent of uric acid in the urine. Roberts also points out that salines exercise a protective influence against the precipitation of uric acid. People who take very large quantities of common salt with their food experience a practical immunity from stone. On the other hand, it is very frequent among the children of the poor who are fed very largely on farinaceous articles and among the natives of India who feed on rice. Acids and iron interfere with the solubility of uric acid and with its elimination.

A fact of great practical importance mentioned by Haig and quoted by Osler, is that "lithia, although a beautiful solvent of uric acid in a test-tube, yet when given by mouth never reaches the uric acid at all because it at once forms an insoluble compound with the phosphate of soda in the blood, thus removing from that fluid one of the natural solvents of uric acid and diminishing its power of holding uric acid in solution." Lithia waters, then, have been found useful because the beneficial effect of the water itself exceeds the harmful effect of the lithia contained in it. This is directly opposed to the prevalent idea of the value of the lithia compounds in the uric-acid diathesis.

For a plethoric habit the free use of alkaline mineral waters, such as Carlsbad and Vichy, is important.

In the treatment of oxaluria much less is accomplished by chemical agents. The usual tonics suitable for cases of debility are often required. Dilute mineral acids, especially nitro-muriatic acid, are considered by many as almost specifics. Their beneficial action is probably accounted for by their power to correct digestive disturbances. Phosphate and chloride of sodium have a distinct solvent action on oxalate of lime. It has also seemed to me, in a few cases, that sodium salicylate has caused the crystals to disappear.

The treatment of calculus in the kidney will not be considered here, as the so-called "solvent" remedies have been found entirely unreliable, and the final resort must be to surgical methods.

LORD ROSEBERRY ON LANDSCAPE ADVERTISING.
—Lord Roseberry, amid the cares of office, has yet been moved to ask: "What is to become of our English landscape if it is to be simply a sanitary or advertising appliance? Think of the feelings of the illustrious Turner, if he returned to life, to see the luggers and the coasting ships which he made so glorious in his paintings converted into a simple vehicle for the advertisement of a quack medicine."

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, March 5, 1894, DR. J. FOSTER BUSH in the chair.

DR. J. S. GREENE read a paper on

THE OBSCURE ORIGIN AND INDETERMINATE COURSE OF ACUTE INFECTION, AS ILLUSTRATED BY A CASE OF MALIGNANT ENDOCARDITIS.¹

DR. PUTNAM: I have been very much interested in Dr. Greene's case. It is a very striking one, and the account he gives opens a great many questions which we all wish with him we were better able to discuss. Some years ago I had a case similar to this in some respects. It was a case of infection causing death in one week or a little more and with lesions of parenchymatous neuritis. The patient had difficulty in swallowing and then difficulty in breathing, before his death. The patient was a man of nervous temperament, otherwise in good health, but had weakened himself very much by excessive sexual intercourse. Otherwise there was no apparent cause for the disease, except that he rode home one night in a open horse-car and was exposed to a severe wetting and chilling. The symptoms came on that night, and he died at the end of ten days. It is rather unfortunate that the discoveries which we make in pathology sometimes chain our knowledge and even our imagination to a considerable degree. We felt we had learned a great deal when multiple neuritis was first discovered, and when the cases began to pour in they seemed to be covered by that term; but, as a matter of fact, as Dr. Greene has pointed out, I think when it comes to a case of rapid death of that sort, the term multiple neuritis, even where we can establish the existence of manifest changes in the peripheral nerves, is often inadequate to cover the whole condition which is present. In my case there was a considerable amount of parenchymatous degeneration, swelling of axis cylinders, and great injection, with escape of leucocytes into the surrounding tissue in the nerves, and a few changes of the muscle. I examined the diaphragm and the phrenic nerve with considerable care; and although changes were present there, it did not seem as if that could have been sufficient for death. It seems more probable that death was due to poisoning of the nervous centres; and in my case that was in a measure borne out by the discovery of changes at the root of the vagus nerve, although there was nothing in the actual nucleus of the vagus which could be called pathological as far as I could tell. I should think it might be still open to doubt whether in Dr. Greene's case there may not possibly have been alterations in the peripheral nerves, for the reason that these alterations sometimes occur at the very extremity of the nerve and not in their course or at the roots. The question of the cause of death in these cases is very interesting; and, as far as I know, the bacteriologists do not pretend to say why patients with diphtheria die, or why patients with tubercular meningitis die. The information at our disposal seems inadequate to account for the result. In an interesting disease more or less allied to one of the many forms of multiple neuritis, — acute ascending

¹ See page of the 557 Journal.

paralysis — the patients apparently die from some poison before the changes are established in any portion of the nervous centres, so far as we are able to detect them.

DR. ERNST: I have but little to say. Of course, from the scientific point of view it would be well for some protest to be entered against the immediate injection of cases where autopsy is likely to be held, because it is not uncommon that the ultimate examination is very much injured by the preparations of undertakers.

DR. E. M. GREENE read a paper entitled,

CRYSTALLINE DEPOSITS IN THE URINE, THEIR OCCURRENCE AND SIGNIFICANCE.²

DR. PUTNAM: I should like to ask whether the high specific gravity generally indicates increase of the total solids, and also whether Dr. Greene can throw any light on the controversy with regard to the symptoms of the uric-acid diathesis?

DR. GREENE: The high specific gravity was indicative of diminution in the amount of water. I did not consider the subject of uric-acid diathesis, on account of the length of the paper. Uric acid has been injected into animals without doing harm. I have seen the explanation where there were severe headache and uric acid, that it was similar to precipitation in the joint, precipitation in the meninges of the brain — a mechanical cause and not uric acid in solution.

DR. AYER: I should like to ask Dr. Greene in regard to the effect of irritation of oxalate of lime or uric acid upon the kidneys, as he states that some authors are of the opinion that it may cause chronic nephritis of serious character. I wonder if he has followed along cases to be certain of that. I have been following five or six years a case where the irritation of the kidneys was probably started by a renal calculus, and since then the urine has generally contained quite a trace of albumen, with casts of different kinds, and almost always oxalate of lime. The patient is no worse. I have been puzzled to know whether it was chronic nephritis or a persistent irritation from oxalate of lime and uric-acid crystals, which might continue many years and be of no consequence.

DR. GREENE: The points I brought out in my paper were chiefly these, that constant irritation of the kidney, producing hyperæmia with blood in the urine and albumen, must do harm if kept up long. I have not been able to follow any case long enough to see it run into a chronic interstitial nephritis. That is a condition which may go on years and years. I know of one case in which a considerable amount of albumen and casts has been present ten or twelve years, and the woman has had several children without bad effect.

AMERICAN SURGICAL ASSOCIATION.

ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

FIRST DAY. — TUESDAY.

THE Association was called to order by the President, DR. J. EWING, of Philadelphia, who delivered the

PRESIDENT'S ADDRESS.

In this was considered only matter of interest to the Fellows of the Association, referring to the previous work of the Association, and the method of best carry-

² See page 560 of the Journal.

ing on the work of the Society. The Secretary, Dr. J. R. Weist, presented, for the President, the Association with a gavel which had been made from a portion of the office chair of Prof. S. D. Gross, the founder of the Association. This was accepted with the thanks of the Association.

The first paper was entitled

THE SURGICAL TREATMENT OF EMPYEMA,

by JOHN ASHHURST, JR., M.D., of Philadelphia.

The following summary was presented:

(1) No operation is justifiable unless the presence of pus is certain; unless thorough treatment by medicinal agents, blisters, etc., has failed; or unless the symptoms, dyspnoea, etc., are so urgent as to demand immediate relief.

(2) The first operation should consist of simple aspiration, with antiseptic precautions.

(3) When the fluid has partially reaccumulated, as it almost certainly will do, if purulent, incision and drainage should be practised.

(4) Drainage is best effected by making two openings, one at the lowest point, and carrying a large drainage-tube through the cavity from one opening to the other.

(5) Drainage should be supplemented by washing out the cavity with mild antiseptic fluids; when the lung has expanded and the discharge has nearly ceased, the tube should be shortened, the upper opening being allowed to heal, and the tube then being gradually withdrawn through the lower opening.

(6) When the lung is so bound down by adhesions that it cannot expand, resection of two or more ribs should be practised (Estlander's operation, so-called), in order to allow collapse of the chest-wall and to promote healing by bringing the costal and visceral layers of the pleura into contact.

(7) The more extensive operations of Schede and Tillmans, while probably justifiable in exceptional cases, are not to be recommended for general employment.

DR. CHAS. B. NANCREDÉ, of Ann Arbor, did not see the advisability in cases where pus was shown to be present by aspiration, of limiting the treatment to this operation. It is held that in a few cases this will be followed by cure, but he had never seen such a case. Where pus is present, he preferred to immediately provide for its permanent evacuation. He called attention to the danger of the drainage-tube becoming occluded by the pressure of the ribs, and he believed that in empyema of long standing some form of excision of the ribs should be employed.

In irrigation, if the pus is not too much contaminated, sterilized water is sufficient; but, if necessary, an efficient antiseptic solution may be used, and if there is fear of absorption, the chest can afterwards be flushed with sterilized water.

If provision is made for the free escape of pus, he had seen no necessity for the removal of large segments of ribs.

DR. T. F. PREWITT, of St. Louis, thought that the rule that no operation is justifiable unless the presence of pus is certain, needed modification. As a rule, we can determine only that fluid is present and cannot be sure that it is pus. He thought it advisable to aspirate even when serous fluid is present. If thorough antiseptics is maintained, this can do no harm. He had never seen it result in the formation of pus, and this

method greatly shortens the duration of the disease. In empyema in children he had seen several recoveries follow aspiration, but never in adults. In children the pus does not seem to possess that thick clotting character so common in adults, and which requires a free opening. In empyema in adults he invariably resects a rib, sometimes two ribs.

Attention was called to the great necessity of caution in the administration of anesthetics in cases of this affection.

As to washing out the cavity, he always does that, using a weak solution of bichloride of mercury.

DR. DEFOREST WILLARD, of Philadelphia: It seemed to him that the whole question was one of thorough drainage of an abscess cavity. Whether or not the ribs should be excised was to be determined by the question of securing free drainage. In children the ribs were so close together that removal of a portion of the ribs was usually required.

In the early treatment he favored the use of a clean aspirator rather than to compel nature to cause the absorption of a large quantity of fluid. Such operation did no harm and saved several weeks in time.

He believed that washing, as a routine measure, did more harm than good. If the pus was decomposed it indicated that freer drainage was needed. If strong antiseptic solutions were employed there was danger of renewed inflammation.

DR. JOHN E. OWENS, of Chicago, called attention to the necessity, when evacuating pus from the chest or washing out the pleural cavity, of changing the position of the patient during the process, in order that all the pus might be removed.

DR. CHRISTIAN FENGER, of Chicago, considered that there were certain cases in which Schede's operation was required. Its place was after milder measures such as incision, drainage, and Estlander's operation. He reported a successful cure where this operation was performed after other measures had been resorted to during seven years.

DR. ROSWELL PARK, of Buffalo, N. Y., thought that the treatment of empyema should be based upon the same principles as are applicable to other abscesses. In acute cases, where we have to deal with streptococcus and staphylococcus forms of suppuration, it may be sufficient in a few instances to simply aspirate. A large proportion of cases of empyema, however, are essentially cold abscesses, — tubercular abscesses. In these cases free incision, free drainage and excision of a rib is required. In certain cases he had resorted to scraping with the sharp spoon, and in some had cauterized the diseased surface with a fifty-per-cent. solution of chloride of zinc. He reported several cases where death would have occurred had it not been for some such radical operation.

DR. W. H. CARMALT, of New Haven, Conn., asked how far it was justifiable to go in the way of resection of ribs in these cases. He reported a recent case in which he had removed portions of five ribs, the longer piece excised being four and a half inches. In these cases it was necessary to remove enough of the chest wall to permit of obliteration of the cavity. He had also used the sharp spoon in order to secure a fresh surface.

DR. M. H. RICHARDSON, of Boston, Mass., said that the questions that arose in the treatment of empyema were different from those in ordinary abscess, for in the former we have an abscess with rigid walls.

With regard to drainage, he had used double tubes provided with valves, but considered them inapplicable and liable to cause increased trouble, for when air or pus is forced out through the tubes by coughing, a vacuum is established and the valve is held against the chest wall, preventing drainage. He believed that Estlander's operation was applicable only to certain forms of cavity, and that there were certain cases where the cavity involved a large portion of the thorax. The operation of Schede is the only one applicable after a failure of Estlander's operation.

DR. STEPHEN F. WEEKS, of Portland, Me., thought that the rule of Dr. Ashhurst, to aspirate, especially in children, was a good one. Sometimes that will result in cure. The tuberculous cavity is to be treated differently from the cavity where this condition does not exist. Thorough drainage is sufficient in many cases. He called especial attention to drainage by packing the cavity with sterilized gauze. In twenty-four hours he removed the gauze and washed out the cavity.

DR. L. McLANE TIFFANY, of Baltimore, Md., considered that the treatment of acute empyema was of more importance than that of the chronic form as it was the more common. The most important point as bearing upon treatment and prognosis was the character of the pus and its bacterial cause. The reason that the child's empyema often yields to aspiration was that in many of these cases the pus was simply a pure culture of the pneumococcus. In the adult we rarely have the pneumococcus form. Here we had a mixed infection. If the empyema was of the amoebic form the patient died. If empyema was due to the streptococcus, the odor was offensive and the cavity needed to be carefully washed out. If empyema was due to the staphylococcus, washing out was not required. Where there was time he preferred to withdraw some of the fluid with the hypodermic syringe and have it submitted to bacteriological examination.

While he used ether in general work, in these cases he preferred the use of a few whiffs of chloroform which appeared in these cases to have a peculiarly happy effect. Only a very small quantity was employed.

The employment of respiratory gymnastics was of much benefit in favoring the expansion of the contracted lung.

DR. JAMES MCFADDEN GASTON, of Atlanta, Ga., referred to the natural tendency of the empyemic cavity to open spontaneously in the anterior part of the chest. He reported two cases in which this spontaneous opening had occurred, followed by recovery.

W. W. KEEN, M.D., of Philadelphia, read a paper on

AMPUTATION OF THE ENTIRE UPPER EXTREMITY (INCLUDING THE SCAPULA AND CLAVICLE) AND OF THE ARM AT THE SHOULDER-JOINT,

with especial reference to methods of controlling hæmorrhage, with the report of one case of the former amputation and four of the latter.

In this paper were considered, first, those amputations which allow of simple disarticulation at the shoulder-joint itself; second, those cases in which the axilla is invaded, yet only to such an extent as to allow of its being thoroughly cleaned out, followed by amputation at the shoulder; and, third, those in which removal of the entire upper extremity, including the scapula and clavicle, is required.

Simple amputation at the shoulder-joint. — Here the

control of hæmorrhage is the key to the situation. The methods for the prevention of hæmorrhage are, first, those applicable to the subclavian vessels; and, second, those applicable to the axillary.

Most text-books recommend compression of the subclavian by the thumb or a well-padded key. Dr. Allis has modified this method by substituting a stick eighteen inches in length, with a pad of sterilized gauze at its extremity. This pad obviates the danger of slipping, and can be applied without fatigue on the part of the operator. The author had suggested compression by means of a solid pad held in position by an Esmarch bandage passing over the perineum; but on trial in the case of a child, this had proven unsatisfactory. A third plan consists in ligation of the subclavian artery. This is objectionable on account of the prolongation of the operation, also on account of the necessity of resecting the clavicle in order to ligate the vein, and if the vein is not ligated there is danger of the entrance of air.

The axillary methods are, first, those in use prior to the introduction of Esmarch's tubing, and, second, the different methods of using Esmarch's tubing.

Under the first head we have: (a) compression of the inferior flap by the fingers, which seize the vessels before they are cut; (b) Harvey's method, by compression of the vessels by means of a padded ruler thrust into the axilla; (c) ligation or seizure of the vessels with hæmostatic forceps before they are cut; (d) Gross's compressor (but practically this is never used); (e) Furneaux Jordan's method, by making a circular amputation at the surgical neck, securing the vessels as in a hip-joint amputation, the blood-vessels having been compressed by an Esmarch band or other method, followed by disarticulation of the upper end of the humerus.

Under the second head are:

(a) After making the antero-external flap, a stout pin is passed through the postero-internal flap between the vessels and the bone, and elastic tubing wound over the ends of the pin. In this method there is danger of the vessels retracting above the constricting band.

(b) Esmarch's method, in which an elastic tube is placed in the axilla and drawn tight over the shoulder, where it is grasped by the hand of an assistant. This is open to the danger of slipping of the bandage after disarticulation of the bone.

(c) Morre's method. In this method the tubing is applied as in the Esmarch method, but is held in place by a bandage passing around the chest and under the tubing in front and behind.

(d) Wyeth's method, by pins and elastic tubing. In this method the operation is performed as follows: The arm is held at a right angle to the body. The sharp-pointed cylindrical pins, eleven inches long and one-fourth of an inch in diameter, are used. The anterior pin is introduced through the middle of the anterior axillary fold at a point a little nearer the body than what may be called the centre of the fold transversely. The point of emergence is of much greater importance than the point of insertion; this should be one inch within the tip of the acromion. The second pin is introduced at a corresponding point through the posterior-axillary fold, emerging an inch within the tip of the acromion. The point of emergence is of importance, for if the pin emerges near or at the tip of the acromion, the moment the head of the humerus

is removed, the tubing is apt to slip downward and compress the two flaps against each other, thus hiding the cavity and permitting the vessels to retract. The pins being in position, a piece of rubber tubing is wound around the axilla and shoulder on the higher side of the pins. The disarticulation having been effected, the main vessels and all visible vessels are tied and the tubing removed, the vessels spurting being grasped with hæmostatic forceps. The author considered this the most satisfactory method of controlling hæmorrhage, and he felt confident that any one who adopted it would abandon all other methods in its favor, except possibly in emergency cases.

Amputation at the shoulder-joint in cases in which the axilla is invaded so high that Wyeth's pins cannot be used.—In 1812, Dalpech proposed to make "an oblique incision extending from the external third of the clavicle to an inch above the inferior border of the great pectoral muscle. We thus discover, and can cut near to its origin on the coracoid process of the scapula, the lesser pectoral. The index finger is then carried through the cellular tissue along the serratus magnus, then the subscapular, and is used as a hook in order to draw outward the mass of vessels and nerves. The artery is found in the anterior portion of this mass." The artery and vein are then ligated. The advantages of this method are that it gives wide access to the axilla; that we can determine with ease how far and how great is the invasion of the axilla, and if thought advisable, the operation can be abandoned at this point, or if it is decided to proceed with the operation, the incision already made serves as the inner part of the deltoid incision. The author had employed this method with great satisfaction in a case where a sarcoma of great size had invaded the axilla nearly to the clavicle.

Control of hæmorrhage in cases in which it is necessary to remove the arm, the scapula and the clavicle.—The methods which have been employed in these cases have been the following: (1) Simple compression of the subclavian artery. (2) Compression of the artery after resection of the clavicle. (3) Ligation of the subclavian prior to beginning the amputation. (4) Resection of the middle half of the clavicle and ligation of the subclavian. (5) Wyeth first tied the artery, then formed his flaps; and when the arm, clavicle and scapula were only connected with the trunk by the veins and nerves, secured the veins and cut the nerves. (6) The artery and vein have both been tied after resection of the middle portion of the clavicle. This seems to be by far the preferable method. The advantages of this method are that it prevents hæmorrhage from division of the axillary and its branches, diminishes the amount of blood lost during the operation, prevents the entrance of air into the veins, permits of a large opening of the space between the upper extremity and the chest, and enables us to divide the posterior attachments of the upper extremity, where the arterial circulation is still going on, at the end of the operation.

As a rule, recovery from this operation follows in from two to three weeks. The mortality in the more recent operations has been extremely low, one in fourteen. Again, by this method we can often amputate wide of the disease, in consequence of the relative smallness of the flaps required. In view of these facts, the author urged that in all cases of malignant disease of the upper end of the humerus, or even of the lower end when it is already diffused, we should not content

ourselves with mere amputation at the shoulder-joint, but should at the same time extirpate the scapula and clavicle.

The author reported a case in which the arm, scapula and clavicle were removed for myeloid sarcoma, occurring in a woman aged twenty years. The operation was done November 29, 1893. The patient recovered, and is still perfectly well.

DR. ROSWELL PARK, of Buffalo, N. Y., said that he had had two cases of total removal of the upper extremity, both which had been successful. One was for railroad injury and the other for extensive epitheliomatous ulcer. In the first case the clavicle was already broken, and the subclavian vessels were secured at the point of fracture. In the second case the clavicle was divided and the vessels tied.

DR. CHARLES B. PORTER, of Boston, Mass., as an illustration of the rapidity with which a malignant disease may advance, reported the case of a patient with sarcoma of the radius where the arm was amputated above the elbow. The disease soon recurred, and amputation at the shoulder-joint was made; and again the disease (sarcoma) recurred so high up that no operation could be employed. The whole history of the case extended over only one year after the first operation. A case was also reported where the arm had been torn off in a railroad accident, where he had subsequently removed the scapula and outer portion of the clavicle by an osteoplastic resection, and the wound was closed by skin grafts. Three months later a hard plate of bone had formed, very similar in shape to the scapula.

DR. JOHN ASHHURST, JR., of Philadelphia, said that he had once used the Wyeth pins satisfactorily in an amputation at the shoulder-joint. Another device to which he had resorted in several cases was to make the incision in the lower flap from without inwards, and secure the vessels in the wound.

(To be continued.)

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THIRD TRIENNIAL MEETING, WASHINGTON, D. C.,
MAY 29, 30, 31 AND JUNE 1, 1894.

GENERAL SESSIONS.

TUESDAY AFTERNOON, MAY 29TH.

The Congress was opened with a brief address by DR. LANDON CARTER GRAY, of New York, Chairman of the Executive Committee. Dr. Gray then introduced the President of the Congress, DR. ALFRED L. LOOMIS, of New York, who in a few remarks thanked the Congress for the honor that it had conferred upon him by electing him to the presidency; but as the time allotted to the session was so short, he refrained from making any extensive address.

This session was under the direction of the Association of American Anatomists, and the subject selected for consideration was

MORPHOLOGY AS A FACTOR IN THE STUDY OF DISEASE.

The discussion was opened by DR. HARRISON ALLEN, of Philadelphia.

It has often been asserted that anatomy is a finished subject, that nothing new can be said of it; but no true anatomist would be content for a moment with a

science thus limited. The science of anatomy is awaiting important advances to be brought about by new readings in the infinite book of Nature. The anatomical text-book assumes an ideal which is properly described. The facts that exceed this ideal or otherwise disturb it are ignored unless they are needed by the surgeon. Three sciences have appeared since the days of Vesalius and of Hunter, sciences so vast as to command the time and energy of distinct bands of workers. These are histology, embryology and general morphology, the most important of the three. Morphology is anatomy writ large. Within it is to be placed the subject of descriptive anatomy as a conventional and unimportant part. The author regretted that anatomy was still taught pretty much as it was a century ago. The demands of the surgeon still dominate the lecture-hall. The forces for the education of the medical scholar are unused; the powers of observation of the practising physician are not stimulated; the outlines of methods by which the science of morphology can be extended, unthought of; while the opportunities of accumulating at the hands of physicians, materials to be used in the explanation of phenomena of organic structure acting perversely, or serving as the causes of diseased action, are neglected. While such knowledge is in the possession of advanced clinical workers it has been obtained after their academic education has been completed. Is it not entirely proper that they should be carefully educated in these points before graduation? Empirical knowledge never leads to true conceptions. Diseases are not related to one another but to their causes. Etiology is the single factor that yields conditions which can correlate. Tissue changes furnish truer guides than function changes. In medicine, elaborate experimentation combined with anatomical observations on the dead, are worth all that is possible from empirical observations on the living. The physician should refer more problems than he is inclined to do to the morphologist.

Reference was then made to the chemical conditions that underlie texture and this was illustrated by the growth of the teeth particularly as influenced by gout.

In like manner the nails show the effect of the gouty diathesis. If among wild animals varieties were found to vary as much among themselves as do gouty and non-gouty persons, zoologists would be justified in defining therefrom subspecies. Why should not gout be defined as well by the results of the chemical compositions of the fluids as by these compositions themselves. Morphological data are the most reliable.

So long as we study diseases as distinguished from their causes and effects, we are empirical. The theories of the humorists, the solidists, or any one of the many theories which have agitated the profession would have been impossible had the system of medicine been broadly based on morphological data.

The changes in the shape and composition of a part of an organism constitute a variation, and the detection of these variations and the propositions on which they are based, constitute one of the chief occupations of the morphologist.

The value of minute knowledge of muscle fibres was illustrated by reference to the causation of œsophageal pouch and heart-failure.

In an exact sense, the structure of an animal may be said to express the resultants of certain forces. In a sense less exact, the work of the anatomist can be said to be that of analyzing the results of these forces.

Disease in a morphological sense is the expression of forces operating inordinately or eccentrically, but yet our systems completely fail when we attempt to explain them by the tests of nutrition or of heredity. The reason of this lies in the inadequacy of knowledge of the causes of which structures are simply the effects. In the study of anatomy it is not so much the fact as the import of the fact that is essential.

The author called attention to the fact that the anatomical material coming under our observation is almost always that of a highly domesticated nature and that in order to study it with advantage we must recall what is in common between man and the animals (both in a wild and domesticated state) about him. Our acquaintance with man as a domesticated animal, as a degenerate animal, and our ignorance of him as a wild and primitive animal, causes the morphologist to regard human structure with the same sort of interest as the botanist entertains for those plants which have been cultivated so long that he has lost knowledge of the typical form of the species. Can the anatomy of such an animal be said to be closed?

Degeneration while a phase of specialization, is one which portrays structures that fail to subserve the highest possible use in the economy. Illustrations were drawn from alterations in the shape of the crown of the teeth and also from the phenomena of polycuspation in the molars. Reference was also made to the proportionate size of the face as compared with the brain-case. The short-faced specimens of the skull of civilized man are the result of some profound impression on the nutritive forces rather than a reversion brought about by natural selection.

To what extent structures which are degenerate become on that account predisposed to disease it is difficult to say, but taken as a whole the animal economy resists the inroads of disease in proportion as its vitalities are maintained at high levels of efficiency. It may be asserted without fear of contradiction that the skeleton of civilized man differs from the skeleton of uncivilized man. In the crania of the wilder types of man, there is usually a disposition for one part of the skull to be in harmony with another part. This is largely absent in civilized types.

Perhaps the best single conclusion to be drawn from the study of morphology as a factor in the study of disease, is its value to humanity. The scientific study of race in connection with diseased action is almost an unbroken field. When this comparative phase of anatomy shall have been formulated, we shall for the first time have a reasonable hope that the subject of human acclimatization, the geographical study of diseases, the causes and motives of migration, and thus indirectly, the history and destiny of man himself, may be in shape for elucidation.

He was followed by DR. THOS. DWIGHT, of Boston.

Dr. Allen defines morphology as anatomy writ large. The underlying idea of his paper is to plead for a longer, broader, deeper course in anatomy. The tendinous heart-strings of every anatomist will vibrate in sympathy, producing a chorus of musical murmurs. Perchance in some of us one of the factors will be the moderator band of the ruminant which has left its normal place near the apex of the human heart to cross near the middle of the right ventricle. The expert auscultator can recognize this cord. It is good for his patient that he should know from anatomy that have these things pointed out rather than pursued. I

such a band may be present and that its sound is no sign of even functional disturbance. The ophthalmologist is none the worse that embryology teaches him the whereabouts of the hyaloid artery which may persist throughout life. Anomalies, therefore, as well as slighter variations are of practical importance. The surgeon needs to know of the fibrous or muscular band which may cross the axillary artery, that the brachial artery may divide high up the arm (very rarely in the lower third), and that the diverging artery, be it radial or ulnar, almost always runs superficially. A third trochanter, which seems much larger than it is, when felt through the soft parts, must not be mistaken for an exostosis, nor a deltoid tubercle of the clavicle for an old fracture.

Before removing the kidney, the surgeon will do well to be sure that it is not the only one. I, myself, within a few months have seen a case of complete absence of one kidney, the other being of about the usual size and in its proper place.

But it is not necessary to turn to anomalies to support the need of a deeper knowledge of anatomy for the practitioner. The statics and mechanics of the skeleton, the action of the muscles are becoming daily more important to the orthopædic surgeon and to the neurologist.

The anatomy of childhood is still almost in its infancy. Though not quite helpless it has not yet made its way into text-books, but hides itself bashfully in scattered papers and monographs. A more thorough knowledge would be of great value to the practitioner in children's diseases. How interesting and how practical in view of infant feeding is the story of the rate of growth of the stomach in the first months of life, and how few know it.

My views of the esteem in which anatomy is held are far less pessimistic than Dr. Allen's. It is but too true that we have many in high places absolutely ignorant of anatomy themselves, who look on its progress with a jealous aversion, but they are mostly on the wrong side of fifty, and they belong to a school of thought that is doomed. On the other hand, I look with confidence to the rising lights. I see in the better class of our young practitioners, a great respect for anatomy. They have a clearer vision of its sphere. One of the most gratifying incidents of my professional life is the constantly increasing number of those who come to me for information on anatomical problems or for the means of solving them.

Surely, from what I have said, I shall not be suspected of indifference to the cause if I do not quite agree with Dr. Allen as to the remedy. He would have students thoroughly instructed in the highest anatomy before graduation. I reply that there is no time. As a practitioner myself of twenty-five years' standing, I am appalled at the amount of knowledge of all kinds which is now necessary for the simplest practice of the profession by any one who would not fall behind his colleagues. I heartily agree with Buxley's saying, that any one who adds one tittle that is unnecessary to medical education, is guilty of a very grave offence. I would leave the matter to the good judgment and tact of the professor of anatomy. While his teaching should be eminently practical in the ordinary sense of the word, I would have him incidentally point out the explanations of structures from comparative anatomy and embryology, and still more insist upon the application of morphology to disease. But I would

would have him show the possibilities of anatomy which unfortunately are impossibilities in the regular course. Thus he will enlarge the student's horizon. It is not necessary to have followed a certain line of research to know that it gives promise of great results. The mind of a student so trained will be in a very different state from that of his comrade who has been crammed with facts from a compendium. Advanced students and graduates are those to whom the highest anatomy will be most profitable, and the more so that they can see for themselves its value, which the beginner must take on trust.

DR. F. BAKER, of Georgetown, D. C., spoke next.

The study of the human organism, of its structure, its functions, its diseases, of the effects that various agents have upon it, therapeutically and otherwise, must necessarily be a study of life and its manifestations; it is a biological science. The study of morphology as a preliminary to the study of disease is a necessity. The great impulse given to the study of anatomy by Vesalius and his followers in the 16th century has not yet exhausted itself. The error in the Vesalian anatomy which has prevailed up to the present time consists in considering the body as an essentially fixed organism. From this view arises the notion that anatomy is a fixed science, but even a cursory view of the history of the science shows this assumption to be baseless. To the modern biologist the human body is by no means fixed and invariable.

The human body has been studied far more than any other organic form. There is no lack of knowledge of details, but for the ordinary student these details are not classified and arranged as the results and sequences of morphological laws. It may even be said that inflammation itself cannot be properly understood without a knowledge of the morphological character of the tissues involved. The whole subject of tumors has, since the investigations of Virchow, been studied from a morphological standpoint, and it has become evident that in order to understand their causes and their history, we must know more about the laws that control cell formation and the growth of tissues.

The human body is built up of cells, and the gross variations in form must depend upon these minute cell activities. These variations may be of all grades. The morphologist studies these variations as indicating slow modifications of the form of the human body. It is well known that the body of man is slowly changing, that adaptations are going on within slowly fitting it more and more to its environment. In this process there are constantly left structures which have ceased to be of value and may properly be termed vestigial. Among such may be noted the vermiform appendix, Meckel's diverticulum of the intestine, the thyroglossal duct, hypospadias and the persistence of the choroidal fissure of the eye producing coloboma.

The erect position of the human body was gradually acquired, and in many respects the body has not yet become perfectly adapted to this posture. The shape of the pelvis has necessarily become modified that it may support the weight of the viscera, yet with all this, that weight is often a cause of hernia. As a result of these changes the pelvis of the civilized woman is less adapted for easy parturition than that of her savage grandmother of the Stone Age. Many of the abdominal viscera show signs of maladaptation. The cæcum and ascending colon are not favorably situated. The liver, instead of being supported from the spine, is

slung from the diaphragm, which to support the weight must receive strong connections from the pericardium and the fascia which supports the heart. This must interfere with the growth and expansion of the lungs. The heart itself works at great mechanical disadvantage. The valves of the veins are not adapted to the erect posture.

As the science progresses there is no doubt that many important generalizations will be made. Some, already, seem almost ready for statement. Among those may be mentioned what may be called the law of stability. It is this: that the stability of a structure varies directly according to the time it has been functionally active in the ascending series of animal life. The structures most readily attacked by disease are those at either end of the scale of activity. The original elementary tissues, epithelium and connective-tissue are the most stable, their derivations, nerve-tissue, muscle-tissue, glandular-tissue are the least stable.

Morphology is throwing light upon a vast variety of subjects connected with the domain of medicine, not only upon the causes of disease, but upon the action of cells, the problems of therapeutics, the very springs of life that underlie heredity, development, training and education. It is a growing science, one that is destined to a great future, promising much for the elucidation of the highest problems of medicine.

DR. BURT G. WILDER, of Ithaca, N. Y., regretted that he had been unable to prepare a formal paper, but he wished to express his agreement with the statement of Dr. Baker, that the human body is not to be regarded as a completed structure. It is by no means completed. The physician should consider very seriously whether it is not his duty to improve the human body in the direction in which it has been moving, namely, by the obliteration of that most frequent source of trouble, the appendix of the intestine. It is the unanimous consensus of opinion among surgeons that the removal of the appendix, if not gangrenous, presents no great likelihood of mortality. It is now four years since he proposed that we should not only do vaccination but also de-appendicize the child at a period of life when time was not very valuable, and thus improve his chances of existence.

Dr. Dwight had alluded to the impossibility of putting more into the curriculum of the schools, and to this the speaker partly agreed; but he held that there should be more morphology taught in the preliminary school education, and he predicted that it would not be many years before most children prior to leaving the ordinary college will know as much anatomy, physiology and morphology in the broad sense as can now be obtained by the average physician.

WEDNESDAY AFTERNOON, MAY 30TH.

The first portion of the session was under the charge of the American Climatological Association. The subject discussed was

SEWER GAS.

DR. ALEXANDER C. ABBOTT, of Philadelphia, presented the first paper, entitled,

CHEMICAL, PHYSICAL AND BACTERIOLOGICAL STUDIES OF AIR OVER DECOMPOSING SURFACES, WITH ESPECIAL REFERENCE TO THEIR APPLICATION TO THE AIR OF SEWERS.

A study of the literature of this subject leaves the impression that many of the opinions advanced are not

based on exact methods of investigation. We are now tolerably well acquainted with the nature of the air of sewers, and we know that as ordinarily found it does not differ conspicuously from the air that we are accustomed to breathe. Studies in bacteriology demonstrate the comparative poverty of sewer gas in bacteria. The general impression is that the air of sewers is under an active pressure and tends to force its way into houses, but numerous experiments with pressure gauges show that such is not the case. The studies upon the chemical, bacteriological and physical side of the subject, together with observations on the health of those constantly exposed to the emanations of sewage, are not of a nature to warrant the opinion that sewer air is the dangerous factor that some believe it to be. There does not seem to be a single conclusive demonstration that the air of sewers stand in causal relation to the diseases for which it has been held accountable.

Among the problems which the author had endeavored to solve experimentally in the laboratory was whether or not it was possible to demonstrate on animals that the gases arising from sewage or from other decomposing substances, have any direct effect upon the health of the animal or its ability to resist infection. The method of experimentation was given in detail. The teaching that because materials containing organisms capable of producing disease are constantly gaining access to the sewers, the air of these sewers must of necessity also contain such organisms is simply an opinion. It is not supported by observations that lead us to accept it as a fact. The more conservative of those who believe in a causal relation between the air of sewers and pathological conditions are coming to the opinion that it is not directly concerned in the production of disease, but that its continuous respiration in some way interferes with the normal vital resistance of the tissues, and thus renders them more susceptible to infections to which they may be exposed.

The author detailed his experiments on animals, and concluded that if experiments upon animals are of any value in demonstrating the positive or negative effect of air saturated with the gaseous products of decomposition, it does not seem reasonable to suppose that the air of a sewer or cesspool, in the enormous dilution in which it exists at the time that it reaches an individual in a house to which it has access, can be of much importance either in the direct production of the diseased conditions or in influencing the vital powers of the resistance of the individual who inhales it.

THE EFFECT OF SEWER GAS IN THE PRODUCTION OF DISEASE,

by DR. A. JACOBI, of New York.

The author presented the following conclusions:

The atmosphere contains specific germs both living and dead. They are frequently found in places which were infected with specific disease.

In sewers, fewer such germs have been found than in the air of houses and school-rooms.

Moist surfaces, such as the contents of sewers and cesspools and the walls of sewers, while emitting odors, do not give off specific germs even in a moderate current of air.

Splashing of the sewer contents may separate some germs, and then the air of sewers may become temporarily infected, but the germs will sink to the ground gain.

Choking of the sewer, the introduction of hot factory refuse, leaky house drains and the absence of traps may be causes of sewer air ascending or being forced back into houses, but this complication of circumstances certainly will be rare.

Whatever arises from the sewer under these circumstances is offensive and irritating. A number of ailments, such perhaps as sore throat, may originate from this cause, but no specific disease will be generated by it except under the rarest of conditions; for specific germs are destroyed by the process of putrefaction in the sewers, and the worse the odor the less is the danger, particularly from diphtheria. The causes of the latter disease are very numerous and the search for the origin in an individual case is often unsuccessful. Irritation of the throat and naso-pharynx is a frequent source of local catarrh. This creates a resting-place for the diphtheria germs, which are ubiquitous during an epidemic, and thus an opportunity for diphtheria is furnished.

Of the specific germs, those of typhoid and dysentery appear to be the least subject to destruction by cesspools and sewers. These diseases appear to be sometimes referable to direct exhalations from privies and cesspools. Fewer cases, if any, are attributable to sewer air.

A simple outlet from the sewer would be dangerous to the general health because of the density of the odors (not germs) arising therefrom. Therefore a very thorough and multiple ventilation is required.

The impossibility or great improbability of specific diseases arising from sewers into our houses protected by good drains and efficient traps must, however, not lull our citizens and authorities into indolence or carelessness; for the general health is suffering from the chemical exhalations, and the vitality of cell-life and the power of resistance are undermined.

SEWER GAS A CAUSE OF THROAT DISEASE, OR THE EFFECT OF BAD DRAINAGE ON THE THROAT.

by DR. BEVERLY ROBINSON, of New York.

Defective sewage may produce a sore throat of a benign character, which affords a soil suitable for inoculation by the diphtheria germ when present in the air. It is an admitted fact that the throat swarms with bacteria at all times; and possibly the Löffler bacillus is among these occasionally, but they are incapable of doing much harm if the individual is in good health. Through the depressing influence brought about by bad drainage, etc., they are capable of multiplying and increasing in virulence, and finally causing infectious sore throats. It is therefore clear how important it is to keep up an excellent condition of general health to avoid contracting throat disease. Proper disinfecting washes and gargles are also of value. While the connection between effluvia from sewers and drains and the condition of the throat cannot always be determined, yet in many cases it is clearly demonstrated. That many cases of tonsillitis are immediately caused by the air of sewers and faecal emanations scarcely admits of doubt. In some cases the sore throats have been confined to particular parts of houses; and when the bad sewage has been remedied, they have ceased to recur. When cases of diphtheria, tonsillitis or erythematous sore throat occur in houses where the plumbing is found to be defective, we should be careful not to ascribe these diseases necessarily to this cause. While throat affections often occur where the

drainage is bad, they may occur where the sewage is in perfect condition or where there is no sewage at all.

The second part of the Session was under the direction of the American Dermatological Association. The subject for discussion was

LEPROSY.

JAMES NEVINS HYDE, M.D., of Chicago, read the opening paper, which was on

THE DISTRIBUTION OF LEPROSY IN NORTH AMERICA.

Reference was first made to the different ways in which the disease could gain entrance into the United States. The northern part of the country has suffered far less than the southern, and even in the latter portion the disease is more common in the southern than in the northern provinces. The United States is exposed to the entrance of leprosy from the four principal points of the meridian, north, south, east and west. That the total result up to the present time is insignificant, has been due, not to wisely-directed vigilance, but rather to the general excellence of the habits of the people, and to their resources and environments.

At the present time the distribution of leprosy in the United States cannot be determined with any accuracy. The credit of being the first to collect statistics as to the number and location of lepers is due to the American Dermatological Association. According to these statistics and those of others, it may be said that the cases of leprosy in the United States have been distributed as follows: Arkansas 3, California 158, Dakota 2, Florida 6, Georgia 1, Idaho 2, Illinois 13, Indiana 2, Iowa 20, Louisiana 83, Maryland 4, Massachusetts 5, Minnesota 120, Missouri 2, Mississippi 2, New York 100, New Jersey 1, Oregon 3, Pennsylvania 6, Utah 3, Wisconsin 20, making a total of 560. The accumulation of cases is found to be principally at points of commercial activity. The number of lepers in this country at the present time cannot be definitely stated.

These facts call for intelligent discussion and for wise provision looking after the needs of the unfortunate leper, and for the safety of the community in which the infected are now living. Tuberculosis alone, at the present time, exposes the health of our population to a greater danger than leprosy. The presence of leprosy in this country offers a constant menace to its inhabitants, and proposes a problem in State and sanitary science which I believe the general government alone can readily solve.

THE CONTAGIOUSNESS, PROPHYLAXIS AND CONTROL OF LEPROSY,

by DR. JAMES C. WHITE, of Boston.

The establishment of the proof of the contagiousness of a disease should be based upon the following points:

- (1) The history of its action upon communities or nations.
- (2) The study of its action upon individuals.
- (3) Its resemblance to other affections generally regarded as contagious.
- (4) The establishment of a satisfactory cause for such contagion.
- (5) The influence of control upon its history and course.

These tests were then applied to the disease under consideration:

(1) The history of its action upon communities and nations. Reference was made to its course in mediæval Europe, where, introduced from the East, it became a pestilence of such overwhelming proportions that no influences of heredity alone could account for its spread. Belief in its contagious nature was then universal. In our own day, the extraordinary rapidity of the spread of the disease in the Hawaiian Islands can be accounted for on no other grounds than its infectious nature. The same is true of its introduction and spread in British Guinea, Trinidad and other places.

(2) The study of its action upon individuals. Great difficulty is here met with on account of the long period of incubation of leprosy, which may be of two, five or even ten years' duration. Such a retardation of the tangible effects of the contagion renders direct historical proof in individual cases almost an impossibility. Again, the tissues of animals other than man thus far studied show themselves indifferent to inoculation experiments. The possibility of using human tissues for such demonstration in satisfactory sufficiency is too remote for serious consideration. In one case a condemned criminal was inoculated, and three years later leprosy appeared. Reliance must therefore be laid upon a careful study of the beginning of endemics in small communities. Another class of evidence is the acquisition of the disease by immigrants of non-leprous nationality into leprous countries. Of this there are many instances on record. Another important fact is the development of leprosy among the personal attendants of lepers. Of this several instances were cited.

(3) Resemblance to other affections generally regarded as contagious. Under this head, reference was made to the many points of resemblance between leprosy and syphilis and tuberculosis, and the speaker held that these strong resemblances suggested an intimate relationship in etiology and pathology.

(4) Establishment of a satisfactory explanation of its contagiousness. With the discovery of the bacillus lepræ, the cause of its contagious nature was demonstrated as clearly as was that of tuberculosis by the discovery of the bacillus tuberculosis. Leprosy is preeminently a bacillus disease, for this organism is found in rich abundance in the tissues.

(5) Influence of control upon its history and course. In mediæval Europe, when the disease was regarded as infectious, the leper was segregated and placed in lazaretos. In later centuries, when the disease had been thus controlled and confined to a few districts, the belief grew up that the disease was not contagious, but was hereditary, and scarcely any one thought of questioning this dictum. At the International Medical Congress in 1876, the author had called attention to the prevalence of the disease in the United States. In 1882 he again called attention to the subject in a paper presented to the American Dermatological Association. His conclusions that the disease was increasing to an alarming extent, and that it was contagious, at that time found few supporters, but since then professional opinion has greatly changed. A study of the disease in other countries shows that where laws for its control have been enacted there has been a great decrease in the number of cases, and that where it has been given free license the number of cases has rapidly increased.

While not denying the possibility of the transmis-

sion of leprosy by heredity, the author held that its apparent occurrence in any instance should not be accepted without the absolute demonstration of the impossibility of inoculation after birth. He believed the theory of heredity to be a dangerous one, and that the sterner judgment of the Middle Ages, which made the leper individually the responsible agent rather than the progenitor, must again be adopted before the affection can be exterminated.

With regard to the prevention and control of leprosy in the United States, the consideration of the following propositions was recommended:

(1) Every physician should be compelled by State law to report to the nearest board of health the existence of a case of the disease, and the neglect to do so on the part of the medical attendant or a member of the leper's family should be a penal offence.

(2) Immigrants affected with the disease should be arrested at ports of entry and along our border, and turned back to their previous homes by the authority of the National Board of Health.

(3) Graded hospitals should be established by the national government, in insular localities where possible, within which both suspected and confirmed cases should be confined, and to which all access should be prevented excepting under proper restrictions.

Such compulsory isolation may be considered cruel to the few, but its longer neglect on our part is certainly a greater cruelty to the many, for in no other way shall we exterminate this most miserable disease.

In the general discussion of the subject, DR. GEORGE H. FOX, of New York, said, that whatever might be the result of inoculation experiments, he was sure that those who had given special attention to the study of leprosy would agree that the disease was communicable, but that the danger of infection from association with the leper is extremely slight. In the United States, the disease has never shown any tendency to spread among those brought in contact with communities of lepers. He thought that there was no necessity for the segregation of the lepers to be found in the United States. To forcibly take these individuals from their homes would be an injustice which the slight menace to the general health would not warrant. Syphilis and tuberculosis are much more liable to be communicated to others than is leprosy. He believed that many cases of leprosy are amenable to treatment and capable of being cured, and he would be in favor of the establishment of hospitals for leprosy where these cases could be studied.

DR. JOSEPH B. BRYANT, of New York, advocated the institution of active measures, because such a course would be a humane one as far as the leper was concerned; it would conduce to public security and confidence; and it would secure good sanitation and better therapy. He offered the following propositions:

(1) That a wise public policy and humane considerations demand that lepers be not permitted to associate with the unaffected.

(2) That the exercise of local authority for their segregation is unwise and unsanitary, as establishing innumerable abiding-places for the disease at great expense, and without the assurance of proper surveillance.

(3) That a safe, prudent and humane policy demands that lepers be properly segregated under the care and control of the general government.

DR. WALTER G. WYMAN, Surgeon-General, United States Marine-Hospital Service, described the effect of the quarantine laws which had been promulgated with the object of preventing the entrance of lepers into the United States. He then considered the reasons in favor of and against the national control of leprosy, and presented the draft of a bill relating to this object. He also suggested that, as a preliminary measure, a leprosy commission should be appointed to study the disease and report upon the best methods of controlling the disease in this country. For himself, he believed that leprosy should be under national control.

DR. ARTHUR VAN HARLINGEN, of Philadelphia, dwelt upon the importance of all physicians studying leprosy so as to be able to recognize its earlier manifestations, which were frequently overlooked. He had good reason for saying that, notwithstanding the rigid quarantine laws, many cases of leprosy had gained access to the country, although they had been subjected to some sort of an examination. This was due to a failure to recognize the early manifestations of the disease.

THE DIAGNOSTIC FEATURES AND TREATMENT OF LEPROSY,

was the subject of a paper by DR. P. A. MORROW, of New York, which was read by title.

THURSDAY AFTERNOON, MAY 31st.

The first portion of the session was under the direction of the American Association of Genito-Urinary Surgeons.

DR. EDWARD L. KEYES, of New York, read the first paper which was on

NEPHRITIS IN ITS SURGICAL ASPECTS.

In opening the discussion on this subject, Dr. Keyes announced his intention of confining himself to a consideration of that form of surgical nephritis in which suppuration occurs, either spontaneously in the course of suppurative disease of the urinary tract below (ascending pyelo-nephritis), or originating below as a result of infection by the surgeon, or in the blood (the descending variety) — all the various forms of so-called surgical kidney.

He divided his paper into three parts: (1) introductory, (2) practical, (3) bacteriological. The introductory section demonstrated by a plentiful citation of authority, mainly French and German, the following points:

(1) Without microbic infection, suppuration in the kidney is impossible.

(2) The bacilli found most often are, notably, the bacterium coli communis, less often (alone or in company with the bacterium coli) the staphylococcus pyogenes aureus and the streptococcus pyogenes.

(3) These bacilli find entrance in a variety of alleged ways.

(4) The introduction alone of these bacilli does not occasion ascending pyelitis, or even necessarily cystitis. It is as much a question of soil as it is of seed.

(5) The soil is made receptive for microbic invasion by a variety of local physical maladies — by anything that interferes with free, urinary outflow; by over-distention or tension; and also by traumatism, and failure of the general vitality of the individual. The kidney is especially prepared for invasion by dilatation of the ureters, a dilatation always occurring from above

downwards, always due to a moderate obstruction of urinary outflow below, never to sudden stoppage of the urinary drainage nor to back-pressure of the urine.

The practical part of the paper contained Dr. Keyes's personal views upon urinary asepis and antiseptis, and detailed the methods which he employed in everyday clinical work and the solutions he used, together with his method of instituting catheter life upon an old subject with clear urine atony, retention, thin-walled bladder, dilated ureter and damaged kidney (as regards its vitality).

The bacteriological study was conducted by Professor Dunham of Bellevue Hospital Medical College, under Dr. Keyes's direction, to determine the destructive or inhibitive power over the three bacilli under consideration, of a great variety of medical substances often used for local antiseptic purposes in the treatment of vesical suppuration, and of a variety of urines medicated by the ingestion of a number of different drugs. About five thousand tubes were examined and the conclusions generalized and tabulated, with the result of showing theoretically which drugs possessed the greatest value under varying conditions—those of direct infection by the surgeon, the tissues not being involved; and those in which, chronic suppuration already existing, the bacilli were protected from the action of the antiseptic. These conditions were reproduced in the laboratory, a method of investigation apparently novel and yielding suggestive results. The experiments consisted in comparing the action of the same drug upon bacteria in Group I, where direct infection immediately created was simulated, with its effect on bacteria in Group II, where chronic inflammation was simulated, the bacteria being more or less protected.

This investigation showed that nitrate of silver was by far the most reliable agent we possess in counteracting the effects of local contamination, while corrosive sublimate was more reliable in Group II, where the tissues were involved. Salicylic acid was shown to be a very reliable antiseptic, and Dr. Keyes proposes a new solution for greater convenience of use. Boracic acid has little or no value, common salt being about as good. Many other agents were experimented with. The various medicated urines showed little or no inhibitive power over bacterial growth.

The following general conclusions were presented:

- (1) Healthy urine is sterile.
- (2) Purulent urine is always microbic.
- (3) Microbic infection takes place from within the body by a number of methods in the course of disease; it is often brought about by instrumental manoeuvres on the part of the surgeon.
- (4) A healthy organism and vigorous bladder can cope successfully with microbic invasion, and rid itself spontaneously or with a little aid of all damage arising therefrom, showing little or even no inflammatory response.
- (5) A suitable condition of the patient's soil is essential to the propagation and perpetuation of the inflammatory phenomena upon the urinary tract, after microbic invasion.
- (6) This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention with atony, and when the ureters are dilated and the kidneys involved in the changes incident to tension below, namely, atrophy and sclerosis above, with or without surface catarrh.

(7) Under these circumstances surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below (occasionally from above) in the course of suppurative disease.

(8) Asepsis, antiseptis and sterilization of urine are ends to be aimed at in genito-urinary surgery, but like all other greatest goods not yet attained in perfection. Much, however, can be done by local means in a prophylactic and curative way, little by internal medication, and possibly as much or more than by any other means by flushing the urinary passages with natural mineral waters.

DR. GEO. M. STERNBERG followed, with a paper on

THE BACTERIOLOGY OF NEPHRITIS.

Ascending nephritis or pyelonephritis is very commonly secondary to cystitis of long standing.

Recent researches show that the bacillus coli communis is found more frequently than any other micro-organism in the so-called "surgical kidney." This bacillus is now known to be the usual cause of peritonitis. It has been obtained in pure cultures in some cases of abscess of the liver, from urinary abscess and from the pleural cavity in certain cases of pleurisy.

Injections of a pure culture made into the ureter, after tying it below the point of injection, have been shown by Schmidt and Aschoff to give rise to pyelonephritis, and the changes induced are said to correspond with those seen in the "surgical kidney" of man. Clado in 1887, Albarran and Halle in 1888, and Rovsing in 1890, have described non-liquefying bacilli found by them in the urine of cases of chronic cystitis and of pyelonephritis, which appear to be identical with the bacillus coli communis, which has been shown by the subsequent researches of Schmidt and Aschoff and of others, to be very variable in its growth on various culture media—upon gelatine the growth is sometimes transparent and sometimes opaque.

Krugius in 1891, first identified the bacillus described by Clado (his "bacterie septique") and by Albarran and Halle ("bacille pyogene") with the bacillus coli communis, and this identification is verified by the researches of Achard and Renault, Schmidt and Aschoff, and others. In 22 cases of cystitis studied by him (1892) Krugius obtained the bacillus coli communis 14 times in pure cultures. Reblaub (1892) obtained the same bacillus in pure culture in 6 cases out of 16 cases of cystitis examined.

The number of cases of pyelonephritis reported by various authors since 1889, in which the bacillus coli communis was found, and was probably the cause of the ascending nephritis, is 29, and in 20 of these it was found in pure culture.

The etiological relation of this bacillus to ascending nephritis seems extremely probable in view of the facts referred to. Certain cases appear to be due also to the presence of one or more species of proteus, and possibly to other micro-organisms.

The general discussion was participated in by Dr. George Chismore, of San Francisco, Cal., and Dr. Francis S. Watson, of Boston.

The second portion of the session was under the charge of the American Gynecological Association.

The first paper by DR. WM. M. POLK, of New York, was entitled

THE CONSERVATIVE SURGERY OF THE FEMALE PELVIC ORGANS.

The data from which the author drew his deductions have been furnished by a study of 164 cases on which he had done abdominal section for disease of the appendages. Of these, 64 were operated on by the radical method, and 100 by so-called conservative measures. By the term conservative he meant to indicate the retention of all tissues which have a reasonable chance of adding to the local or general well-being of the individual. Conservative surgery is applicable to traumatism, non-malignant disorders and the early stages of infectious disorders of the female pelvic organs.

The advisability of conservative operations on the perineum, vagina and cervix has long been recognized and accepted. The author then went on to speak of myomectomy. Where the tumor has a pedicle or a distinct capsule and the tumors are not too numerous, operations for the removal of the tumors themselves may be indicated. Ligation of the broad ligament has been suggested in order to check the growth and lessen the hemorrhage. This operation seems to be capable of filling a valuable place for these indications. It seems to be better than the operation of oöphorectomy, but as yet our knowledge is insufficient to enable a more definite statement to be made.

One of the most conservative operations is curetting, with the drainage and depletion to be obtained by packing. This is applicable in all forms of endometritis and metritis, whether acute or chronic. In acute or subacute inflammation after abortion or labor, it is of great service if done at once.

It may be that in affections of the appendages, efficient depletion can be secured by the cavity of the uterus, and will do much toward effecting a cure. The results should be best in the early stages of salpingitis and oöphoritis, but the chronic cases are not beyond its influence. If done properly, it is harmless and renders the secondary operation safer. The more the speaker had employed this method of treatment, the better was he pleased with it. Women are the better mentally and physically for the maintenance of menstruation and ovulation. Until recently many conditions of the tube or ovary were considered adequate causes for their removal. Such is not now the case. The functions of menstruation and ovulation should be preserved when it can be done without sacrificing the patient's health or life. In cases of destructive inflammation of the appendages, the operation is best done after the subsidence of the acute inflammation. The tendency of these inflammations is in the direction of resolution. There are many cases of occluded adherent tube in which the ovary is in good condition. The same statement applies to some cases of pyosalpinx and many cases of hæmatosalpinx. The author's proposition was to remove such tubes and leave such ovaries. The nearer the patient is to nature's menopause the less is the necessity for such conservatism. In early life it is urgently necessary. He had operated on 45 cases in this way; and in their ability to work and enjoy life they are in as good condition as any equal number of cases of oöphorectomy. Mentally they are far better.

In 36 cases he had resected ovaries the seat of simple or blood cysts. In all but five cases the results were entirely satisfactory. In two cases there was fresh development; and in three suppuration in the cyst occurred due to infection from the catgut. Where the tubes have been simply adherent, they are released and allowed to remain. Twelve such cases have done

well with the exception of one where gonorrhoeal infection spoiled the work. Where the abdominal opening is closed, this is opened and the fimbriated ring stitched back.

As demonstrating the possibility of pregnancy after operations of this character, he reported five cases from his own practice where women had become pregnant after such procedures. The precise question is, however, not so much the possibility of pregnancy but the mental, moral and physical influences of allowing the ovary or a portion of it to remain.

DR. WILLIAM GOODELL, of Philadelphia, said that he had taken the liberty of changing the title of his remarks to

THE CONSERVATIVE TREATMENT OF THE FEMALE PELVIC ORGANS,

preferring to use the word "treatment" instead of "surgery." This enlarged the scope of the subject, and was more in keeping with his views; for he held that besides strictly surgical ones, there were other kinds of conservative treatment which are especially adapted to the ailing female organs. He considered the whole question of the proper treatment of these disorders to hinge on the effect of castration in women. These effects are prolonged and distressing vaso-motor disturbances (often very hard to bear) and a tendency to morbid brooding, low spirits, melancholy, suicidal impulses, and even to insanity. Then, again, castrated women are liable to become unsexed to that extent as to lose all sexual feeling, or to have it greatly blunted. In some cases senile atrophy of the genitalia takes place, or in its place a hypertrophic condition of the vulva occurs, which forbids coition and causes much domestic unhappiness. An inevitable and deplorable result is sterility, which is often a cause of great sorrow. The author laid stress upon the prevalent lay opinion that women deprived of their ovaries are thereby wholly unsexed. Castration in the male or in the female is alike regarded as a sexual mutilation to which is attached a stigma. No woman would marry a eunuch, and few men would wed a woman without ovaries. It is then manifest that during the period of woman's menstrual life her mental, physical and social welfare depends largely upon the continuance of the catamenial and reproductive functions. Hence the conservation of those organs which preside over these functions is of the utmost importance.

The speaker reprehended that hasty operative interference based on the plea that chronically diseased appendages are dangerous to life, for in his experience few women perish from chronic disorder of these organs even when pus is present. More women die from the radical operation than from the disease itself. To restore such women to health, abdominal section is by no means always necessary. Many have been cured by curetting and draining the womb. Others he had seen get well under the use of rest, massage, electricity, alteratives and local applications, although they had been sent to his private hospital to have their appendages removed. In a few instances among his own patients this treatment was followed by conception and pregnancy.

The possibility of a closed-up Fallopian tube regaining its lumen is warmly disputed; but since uterine fibroids of large size spontaneously disappear through retrogressive metamorphosis, why may not the thin

tubal septa of inflammatory origin also melt away and restore the bore of the tube? He cited examples in which great disorganization of the tubes and ovaries did not prevent conception. Cases were also related in which, after a small fragment of an ovary and a short stump of a tube were left behind, pregnancy took place.

In view of these interesting facts, he advised that when therapeutic measures failed and the final appeal was made to the knife, as little as possible of the appendages should be taken away. If the tubes and ovaries are simply adherent and not otherwise damaged, they should merely be freed from these adhesions, and not extirpated; if they are diseased, only the unhealthy portions should be removed. He had found that a piece of ovary not larger than a small bean was quite ample to maintain intact menstruation and the sexual feelings.

He contended that the aim of modern surgery is conservation. Limbs, members and organs are now saved which formerly would have been sacrificed. This is its glory, and this has been brought about by antiseptics. On the other hand, antiseptics, by the glamor of success, so dazzled modern gynecology as to make it a spoiler rather than a conservator. Reform here is greatly needed, the reform of conservative gynecology.

The general discussion was participated in by Dr. Lutaud of Paris, Dr. Matthew D. Mann of Buffalo, Dr. Joseph Taber Johnson of Washington, Dr. Howard Kelly of Baltimore and Dr. Florian Krugg of New York.

Recent Literature.

Treatise on Ruptures. By JONATHAN F. C. H. MACREADY, F.R.C.S., Surgeon to the Great Northern Central Hospital; to the City of London Hospital for Diseases of the Chest, Victoria Park; to the Cheyne Hospital for Sick and Incurable Children; to the City of London Truss Society; and Surgeon in London to the Merchant Taylors' Company's Convalescent Homes at Bognor. Philadelphia: P. Blakiston, Son & Co. 1893.

The author divides this book into two parts. Part first is on ruptures when the function of the bowel is undisturbed. Part second is on ruptures where the function of the bowel is interrupted.

As surgeon to the City of London Truss Society, Mr. Macready has had an exceptional opportunity to study herniæ, particularly from the non-operative point of view. Statistics are presented in this work in a thoroughly judicial way; they are so misleading at times that it is a pleasure to read the unbiased presentation of this interesting subject by Mr. Macready.

The forms of herniæ are clearly described, and attention is called to the changes which occur in the shape of the abdomen, especially in long-standing cases of hernia.

The trusses which are shown in the illustrations are not models of lightness; they suggest clumsiness.

The subject of hernia is presented in a clear and scholarly manner. The list of references at the end of each chapter is especially to be commended. The book's value is added to by an admirable index. It is well illustrated, printed and bound.

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THIRD TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE Third Triennial Congress in Washington of the fourteen special national associations and societies has furnished additional proof, if any were needed, of the distinct and increasing value of such an organization to medical science and medical practice and to the higher aspirations of the medical profession in our country. It is a comparatively short time—only thirty years—since the first of these associations began to be started amid some misgiving and against some opposition. The older associations soon proved their usefulness to the profession, and successive years have witnessed the formation of others in new fields until the present number has been reached, and all departments of medicine are represented from anatomy and physiology, through general medicine and general surgery to climatology, pediatrics and genito-urinary surgery. All of these associations are flourishing; their annual meetings are well attended; good work is presented and intelligently discussed; and membership is prized and sought for by the best men—teachers and practitioners—in the profession.

It would seem, however, as if the division of subjects had gone quite far enough, and we see no good reason for the further multiplication of separate societies. But there is every reason for the continuance and perfection of these triennial gatherings of all the separate societies at one time and one place. The very subdivision and specialization of professional interest and work is the strongest argument in their favor. The opportunity afforded for the discussion of such subjects as those appointed for consideration in the General Sessions of this Congress, by representative members of the special societies from their different points of view, is of great value if availed of, and might be of much greater value if made more available.

Whilst appreciating the force of the reasons which led to the adoption of the arrangement of this year, we still think it a mistake to attempt the presentation and discussion of two important and debatable subjects in

one afternoon, allotting to each only an hour and a half. The result must inevitably be that which obtained this year. We shall have a presentation of the subjects, an excellent one it is true, but still such as might be had at an annual meeting of the special society of the day; but the discussion, and such a discussion as is only possible under the conditions of the triennial congress, is conspicuous by its absence. It would be better to have one subject treated as it might and should be treated by such a body of men, than to give each association more frequently the empty honor of selecting and presenting the topic of the day. We hope the Executive Committee will see its way to putting the Congress in a position to do for the profession in this respect what may reasonably be expected of it.

The best papers presented, as a rule, were the short ones, and the presiding officers would do well to be more rigorous with those readers who have not learned to appreciate the merit and the possibilities of condensation.

Under any management, the great advantage of meeting distinguished and rising collaborators in congenial pursuits is inherent in such a reunion. Men from different parts of the country make new professional acquaintances and cement old friendships. Junketing is happily absent, the only general festivities being the gracious reception by the President and Mrs. Cleveland of the members of the Congress, and a subscription dinner at the Arlington Hotel.

The weather was all that could be desired, and Washington looked its best; under such conditions it is a national capital of which no American need be ashamed, especially if he avoids the so-called debates in the Senate and House of Representatives. No wonder the "industrialists" (we refer to Coxey armies, not to the "trusts" or "industrialists" of the Stock Exchange) were tempted to look upon it as a place of hope and promise!

The *Congressists* registering numbered four hundred and ten, and of these comparatively few had cause to regret their visit. The sufferings experienced three years ago were not repeated, and, with few exceptions, the gastro-intestinal tract made no protest. Notwithstanding this amelioration, the Executive Committee was empowered to name the place of meeting of the next Congress, Washington not being specifically designated.

At the business meeting held Friday afternoon, June 1st, at the instance of the Dermatological Association, it was voted to memorialize the Congress of the United States with the view to the appointment of a commission of five to investigate the prevalence of leprosy in the United States and in the countries upon its borders and to suggest means for its control.

A resolution was passed entering the most earnest protest of the Congress against any legislation tending to interfere with the advancement of medicine by means of experimentation upon animals conducted by properly qualified persons.

A resolution was passed that, in the opinion of the Congress, the proposed reductions in the number of medical officers in the army and in the appropriation for the Library of the Surgeon-General's office, are unwise and are contrary to the best interests, not only of the army, but of the medical profession of this country and of all who depend upon its members for skilled professional services.

THE CONVEYANCE OF SCARLET FEVER AND DIPHThERIA BY PUBLIC CARRIAGES.

It has not infrequently been noted that a ready source of infection with scarlet fever and diphtheria exists in the public hackney vehicles of a large city—inasmuch as they are used without regard to contagion by patients with such diseases. Even among physicians it is not, however, generally known that such a source for contagion has no legal right to exist, and that with a little energetic coöperation it might practically be done away with.

The great majority of all cases of these contagious diseases carried in public vehicles in Boston are patients taken to its City Hospital. A large number of these patients are sent to the hospital by their physician, who is probably in most cases ignorant of the police regulation forbidding such procedure, which reads: "No person having charge of any hackney carriage shall receive or permit to be placed therein, nor convey in or upon the same, any person sick or infected with any contagious disease, or the body of any person deceased from such disease."

The drivers of herdies and cabs are, of course, aware of this regulation, but are too often willing to take their chance of escaping conviction and fine. Convictions have not been many, fines have not been large and have involved no loss of license, so that financially the risk is a good one. The sense of moral responsibility toward the public is not highly developed in the average cabman, nor is his diagnostic knowledge of disease acute. Heavier penalties would doubtless improve both faculties.

It is by the physician, however, that much may be done towards abolishing this dangerous practice. In the past many have sent their contagious patients to the hospital in cabs through ignorance of this rule or through thoughtlessness.

The City Hospital sends its ambulance, free of charge, for any and every case of scarlet fever or diphtheria which it can admit. The transfer from the house to the hospital can be made with as much speed and more comfort in an ambulance than in a cab, and without subsequent exposure of other people. Now that attention has been called to this easily remediable evil, it is hoped that all physicians will coöperate in suppressing it by refusing to sanction carriage-transfer of patients, and insisting that cases which they send to the hospital be taken only in the proper ambulance.

If physicians are to be firm in requiring their patients to make use of a hospital ambulance they have

right to expect that, on their side, the hospitals will take all precautions to have no secondary infection traceable to the use of the same ambulance for conveying both scarlet fever and diphtheria patients. There are many cases in which, either from an undetermined diagnosis or from personal feelings of the patient or the family, the physician's line of duty to his patient and to the general public is not an easy or simple one to follow. In such cases his position of insisting on the use of a hospital ambulance will be made much easier and more secure if he can assure his patient that the ambulance is not used indiscriminately for both scarlet fever and diphtheria. In this city he cannot make this statement, as there is but one ambulance for contagious diseases at the City Hospital. He should, at least, be able to state that the same blankets, pillows and mattress are never used without precautions for more than one patient, and that the ambulance is thoroughly disinfected after every trip.

RECENT SANITARY IMPROVEMENTS IN HAMBURG.

THE great Hamburg fire, half a century ago, prepared the way for the broad streets, the great water park made by damming the Elbe and flowing extensive flats, the excellent water-supply and the admirable system of sewers which made the city the pioneer, under the distinguished English engineer Lindley, in modern sanitation. Paris, and next London, but in a far inferior way, followed with their improved sewerage, and then came the filtration system of the London water-supply. The exemption from cholera in Hamburg in subsequent epidemics, furnished the most powerful argument in Europe, and especially in Germany, for cleaning up their cities and for establishing the theory that cholera comes chiefly from drinking water contaminated by human excrement.

It is rather curious that, in the growth of the city and in the subsequent contamination by human excrement of the river providing their drinking water, Hamburg should have suffered so from cholera in 1892, as to be the great lesson to the few remaining doubting Thomases who held to Pettenkofer's ground-water theory of the origin of that disease.

Under the title of "Hamburg's New Sanitary Impulse," in the June number of the *Atlantic Monthly Magazine*, Mr. Albert Shaw has admirably described the methods of sewage-discharge, of a new intake from the river and of a vast system of water-filtration which had been planned before the last epidemic.

Under an American, Dr. Dunbar, the hygienic laboratory makes frequent and minute bacteriological examinations of the drinking water, and carefully notes the results of filtration. It would be curious to know whether the very valuable original work in that direction done in recent years by the Massachusetts State Board of Health had given any hint or had furnished any knowledge as to the efficacy of efficient filtration in making safe water which had contained

the specific germs of disease. The fact had been demonstrated practically by the London and Altona filter-beds, but the scientific investigations made have provided the explanation of the fact and showed the degree to which filter-beds could be depended upon.

MEDICAL NOTES.

AN HONOR TO DR. GOODELL. — Dr. William Goodell, of Philadelphia, has received the honorary degree of LL.D. from Jefferson Medical College.

BILLROTH'S SUCCESSOR AT VIENNA. — Professor Dr. Czerny, of Heidelberg, is reported to have been officially called to be Billroth's successor at the University of Vienna.

CHOLERA IN PRUSSIA. — Cases of cholera were reported lately from Upper Silesia and the city of Stettin. Dr. Fairfax Irwin, of the Marine-Hospital Service, Sanitary Inspector at Berlin, was immediately ordered to Stettin to make an investigation.

A SURGICAL OPERATION UPON KAISER WILHELM II. — It has been officially reported from Berlin that a small encysted tumor was removed from the Emperor's cheek last week by Drs. Bergmann, Leuthold and Schlange. It is stated that the operation was done without anæsthetics.

SMALL-POX IN CHICAGO. — The Health Department of Chicago is having great difficulty in preventing the spread of small-pox, owing to the opposition of the Polish and Bohemian population, among whom it is chiefly epidemic. In the house-to-house investigation which they have been forced to make, the Board is obliged often to have police protection, and in many cases to break down the doors of houses with sledge-hammers. On June 1st fourteen cases were found in this manner, concealed in tenement-houses.

A DISSATISFIED PATIENT. — The cable announces that Prince Bismarck's left leg is so feeble he can only stand on it a few minutes at a time. He explained to a friend that upon the recommendation of a Russian Grand Duchess he consulted a Russian doctor some time ago. He has since learned that this doctor was an idle and ignorant fellow — the head of a children's hospital in St. Petersburg, where he killed off 3,000 patients annually! "He ruined my leg, and I have suffered the consequences ever since."

INDIVIDUAL COMMUNION-CUPS. — The opposition to the common use of one communion-cup is increasing rapidly among the laity, as well as among physicians, for the laity nowadays are by no means ignorant of bacteriology. The fruit of the tree of knowledge is bitter indeed, and is now found to be infected with bacilli. Kissing, the world old expression of bodily love, has been found scientifically dangerous and is going out of use, so it is said; and now even a spiritual love must not manifest itself by the use of a common cup. As one advocate of bacterial individuality has recently written, "Let us mingle our tears in sym-

pathy, our prayers in supplication, our songs in praise, but permit each one to possess in solitude his individual bacteria."

A NEW ENGLISH "SPECIALIST." — According to the *British Medical Journal*, a new specialist has made his appearance in England, and at present is busily engaged in sending his circulars to his expected patrons. As this new operator is a "circumcision specialist," his notices are sent to newly-made fathers of finely-formed but too preputially endowed sons. The following are extracts from one of these circulars: "Every Circumcised person have always been so hardy and thereby escaping obscure nervous disorders, the facts of which are acknowledged by highest medical authorities." "Every invalid or victim of some obscure nervous disorder should not neglect this, as it will materially assist in restoring him to health." "What are the benefits derived therefrom? Predisposition to and Exemption and Immunity from disease."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon June 1, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 37, scarlet fever 55, measles 25, typhoid fever 1.

A CASE OF SMALL-POX IN RUTLAND, VT. — Last week a traveller from Chicago was taken ill at a hotel in Rutland, Vt., with what proved to be small-pox. The hotel was at once quarantined by the health authorities.

AWARD OF THE BOYLSTON MEDICAL PRIZE. — The Boylston Medical Prize for 1894 has been awarded to Dr. Norman Walker, of Edinburgh, Scotland, for an essay entitled "The Histological Varieties of Cutaneous Cancer."

DR. WALCOTT'S SMOKE-TALK AT THE UNIVERSITY CLUB. — Dr. Henry P. Walcott, Chairman of the State Board of Health, gave a smoke-talk at the University Club last Wednesday upon the proposed changes in the Charles River Basin.

THE MASSACHUSETTS CREMATION SOCIETY'S INVITATION TO PHYSICIANS. — In connection with the annual meeting of the Massachusetts Medical Society, the building of the Massachusetts Cremation Society at Forest Hills will be open for inspection from two to four P. M. on Tuesday, June 12th, when the heat will be applied to the retorts and the process carefully explained.

NEW YORK.

SMALL-POX QUARANTINE AT SING SING REMOVED. — On June 2d, Warden Durston removed the quarantine from Sing Sing prison, which had been closed to visitors for nearly two months on account of several of the convicts having had small-pox. All of the patients have now recovered and are at work again.

THE DEAD FISH IN THE WATER-SUPPLY. — Considerable alarm was occasioned a short time since by

the publication in the newspapers of the report of Dr. J. G. Wood, health-officer at Brewster's, in the Croton water-shed, that there were large numbers of dead fish in Haines' Pond, a part of the Croton system, near Sodom Reservoir, and that he was led to believe that some epidemic was prevailing among the fish which might pollute the water. The gills of the dead fish, he claimed, had a diphtheritic appearance. The matter was at once investigated, although the officials of the New York Board of Health, recognizing the fact that diphtheria is a disease confined exclusively to warm-blooded animals, felt that the only danger that could arise from the presence of dead fish in the water was from decomposition, and that that was very slight. It is stated by Dr. Biggs, bacteriologist to the Board, that chubs, or suckers, are susceptible to a peculiar disease every spring, which develops a fungus-like growth about the head, and which carries them off in great numbers. At the meeting of the Board of Health held May 28th, reports were submitted by Dr. Biggs and by Dr. Lederie, chemist to the Board, which showed that there was no contamination of the water from the cause mentioned. It is interesting to note that while, according to Dr. Biggs's examinations, the water taken from Haines' Pond, where the presence of the dead fish first excited alarm, showed 182 colonies of bacteria, and the water from Sodom Reservoir, 384 colonies, a sample of water drawn from a hydrant just outside the Board of Health Building, on Mulberry Street, showed no less than 520 colonies of bacteria.

Miscellaneous.

RETROGRESSIVE LEGISLATION IN REGARD TO MASSACHUSETTS BOARDS OF HEALTH.

THE following comments appeared in the *Boston Herald*, of May 25th:

"In the year 1797 a law was enacted in Massachusetts providing for the election of boards of health in towns. By an amendment which was made twenty years later it was further provided, that, if any town failed to elect such a board, 'the selectmen shall be the board of health.'"

"By this wise enactment, towns in Massachusetts have, for nearly a century, had some provision for boards of health; and, for nearly eighty years of that period, such a board has been in actual existence in every town in the Commonwealth, to which the people had the right to look for sanitary protection."

"Let us now examine the legislation of 1894 upon this subject. By the provisions of Chapter 218 of the Acts of the present year, the Acts of 1797 and 1817 are repealed so far as all towns having more than 2,000 inhabitants in each are concerned, and a board of health may or may not exist, in accordance with the varying whims of the voters of such towns. If the town does not elect a board of health, then, under the present law, such town is entirely without any local sanitary protection — a condition of affairs which has not existed for at least three-quarters of a century."

"In Section 2 of the same Act, provision is made

for the election of a board of health in every town having a population of less than 2,000, the old provision being here retained, that if a board is not chosen, 'the selectmen shall constitute such board of health.' By this provision it appears that each one of the small towns must have a board of health of some sort, while in the large towns the law is permissive only.

"Now it is nothing less than a sanitary axiom that increasing density of population requires the enactment of better sanitary laws for the protection of the people; and since the population of the State has increased from about 400,000 in 1797 and a half-million in 1817 (the date of enactment of the early laws upon the subject) to two and one-half millions at the present time, and, since this increase has been mainly in those towns which have populations of more than 2,000 in each and not in the small towns, the legislation in this direction ought to be in the line of improvement and not of retrogression. Measures ought, therefore, to be taken to remedy this defect before the close of the present session."

MR. GLADSTONE'S TRIBUTE TO SIR ANDREW CLARK AND THE MEDICAL PROFESSION.

A LARGELY attended public meeting was held in London recently to take definite action upon the memorial to Sir Andrew Clark. The chief address was made by Mr. Gladstone, who paid a most eloquent tribute to his late physician and to the whole medical profession as well. He said:

"The profession itself, is one with regard to which it is impossible, I think, not to be conscious that its position in our generation, and in some generations previous, has been a position continually advancing and continually widening. The other learned professions undoubtedly had a start of the medical profession. Four or five hundred years ago property was of more worth than human life and physicians were little heard of. But the position of the medical profession to-day is becoming one of vital and commanding interest to the whole of society, and I anticipate that that interest must continue. While wealth increases, while inventions and discoveries increase, wants will increase and enjoyments will increase; and, in connection with those wants and enjoyments there will, I fear, be a corresponding increase of infirmity and disease, and the medical profession braces itself to grapple with the situation which has been created, and continually advances in knowledge, credit and importance. My own life has been long enough to enable me to witness, and in some degree to measure, the change that has taken place. I have had the good fortune of knowing many eminent and distinguished men in the profession during the last threescore years, and I have seen also a great change in capacity, in attainments, and in competency to deal with the difficult, the almost insoluble, problems that are continually presenting themselves to the mind of the medical man.

"It appears to me that it was eminently desirable that, in a time like this, a man such as Sir Andrew Clark should rise to the head of his profession. For, after all, we require something more than knowledge, something more than skill. We require great devotion to the purposes of the profession; and that devotion never, I think was exemplified in a more remarkable manner than in the career of Sir Andrew Clark. He loved his profession with his whole heart and soul.

While engaged in that profession he loved it not only with sincere and cordial but with chivalrous devotion. We need not say that the age of chivalry is altogether passed so long as we have among us men of the type of Sir Andrew Clark.

"I think the profession has done well in taking by common consent Sir Andrew Clark as the typical man, the representative of all that is best and noblest in the profession and its purposes. Others may judge better than I can of his scientific ability. What I have seen is his patience, his thoroughness, and his absorption in the care of his patient as if that one case was all with which he had to occupy his mind. I have had to note in my own instance a warmth of friendship and assiduous prosecution of the task of watching my health which I know not how adequately to describe. Although he was a much younger man than I, yet he followed me from month to month and week to week with something that resembled paternal affection. I am sure that whatever happens; whatever may have been the past advances of the medical profession, and they are great; whatever may be the future advances of that profession, and they will be greater still, — there will never come a time when the profession will not be justly satisfied, and glad to have recorded upon its annals, a name such as the name of Sir Andrew Clark."

Correspondence.

"RESERVING THE CLAIM OF EXEMPTION FROM REGISTRATION."

BOSTON, June 4, 1894.

MR. EDITOR:—In the *Boston Medical and Surgical Journal* of May 24th, a correspondent suggests correctly, that members of our State Society, by its act of incorporation, have a complete license to practice without registering under the proposed new law. Incomplete as this law may be, a refusal to register might, by some, be construed as showing a disposition to obstruct any legal regulation.

I will mention a way of registering, and at the same time of reaffirming the old corporate right. It was suggested by an eminent attorney, and adopted by several physicians in regard to a law for regulating a specialty, a few years ago. It is to write before or over the signature, the phrase: "Reserving the claim of exemption from registration."

Very truly yours,
J. L. W.

METEOROLOGICAL RECORD.

For the week ending May 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer			Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S. 20	30.25	46	48	44	96	96	N.E.	N.E.	20	21	R.	R.	.04
M. 21	30.34	46	48	43	92	88	E.	E.	24	9	O.	O.	
T. 22	30.18	50	62	39	72	62	N.W.	S.W.	3	13	O.	C.	
W. 23	29.93	60	70	50	68	84	W.	E.	7	4	O.	F.	.03
T. 24	29.74	49	52	46	100	97	N.E.	N.E.	13	22	R.	R.	1.10
F. 25	29.64	54	59	48	80	90	S.W.	N.	4	7	T.	O.	
S. 26	29.85	54	61	47	70	78	N.W.	S.E.	10	9	O.	O.	.06

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat-
ening; N., snow. † Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 26, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.	
New York	1,891,306	721	272	16.94	14.84	.98	5.86	2.10	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	363	109	9.62	7.28	1.04	5.45	.78	
Brooklyn	978,394	344	128	14.70	14.70	1.50	7.80	.90	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	487,387	228	66	14.08	13.64	1.76	5.16	2.20	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,431	95	22	11.55	11.55	4.20	2.10	—	
Cincinnati	305,000	103	39	7.76	14.55	2.91	2.91	—	
Cleveland	290,000	130	72	14.40	3.76	2.16	2.16	1.44	
Pittsburg	283,709	—	—	—	—	—	—	—	
Milwaukee	250,000	—	—	—	—	—	—	—	
Nashville	87,764	35	12	8.58	17.16	—	2.86	2.86	
Charleston	65,165	29	15	13.80	8.45	6.90	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,217	22	12	18.20	—	—	13.56	4.55	
Fall River	87,411	41	22	—	—	—	—	—	
Lowell	87,191	28	7	—	—	—	—	—	
Cambridge	77,100	21	6	33.33	—	—	4.76	23.80	
Lynn	62,658	13	6	15.38	7.69	—	7.69	—	
Springfield	48,684	13	3	—	15.38	—	—	—	
Lawrence	48,365	—	—	—	—	—	—	—	
New Bedford	45,888	19	10	—	21.04	—	—	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,283	13	6	38.45	7.69	—	15.38	15.38	
Brookton	32,140	9	1	11.11	22.22	—	—	—	
Haverhill	31,398	5	2	—	20.00	—	—	—	
Chelsea	30,284	13	1	23.38	44.78	—	7.69	7.69	
Malden	29,394	9	1	—	22.22	—	—	—	
Newton	27,568	4	1	—	—	—	—	—	
Fitchburg	27,146	4	1	—	—	—	—	—	
Taunton	26,972	6	1	—	—	—	—	—	
Gloucester	26,668	—	—	—	—	—	—	—	
Waltham	22,058	6	2	—	16.66	—	—	—	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,802	2	0	—	—	—	—	—	
Everett	16,585	2	0	—	—	—	—	—	
Northampton	16,381	4	0	25.00	—	—	—	—	
Newburyport	14,073	2	1	—	—	—	—	—	
Amesbury	10,920	5	1	—	20.00	—	—	—	

Deaths reported 2,339: under five years of age 829; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 329, acute lung diseases 307, consumption 262, diphtheria and croup 152, scarlet fever 41, diarrhoeal diseases 34, measles 30, whooping-cough 27, typhoid fever 19, cerebro-spinal meningitis 9, erysipelas 6, small-pox 5, malarial fever 4.

From measles Brooklyn 10, New York 8, Cleveland 6, Philadelphia 3, Fall River 3, Nashville 1. From whooping-cough New York 9, Boston 5, Brooklyn 3, Washington and Cleveland 2 each, Cincinnati, Charleston, Fall River and Salem 1 each. From typhoid fever Philadelphia 6, New York 3, Washington 2, Brooklyn, Boston, Cincinnati, Cleveland, Charleston, Lowell, North Adams and Woburn 1 each. From cerebro-spinal meningitis New York 5, Cleveland 2, Lynn and Brockton 1 each. From erysipelas Philadelphia, Boston, Cleveland, Lowell, Haverhill and Northampton 1 each. From small-pox New York 4, Washington 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending May 19th, the death-rate was 17.1. Deaths reported 3,426: acute diseases of the respiratory organs (London) 234, measles 257, whooping-cough 112, diphtheria 72, scarlet fever 37, diarrhoea 37, fever 22, small-pox (London, West Ham and Birmingham 3 each, Manchester 2, Wolverhampton and Oldham 1 each) 13.

The death-rates ranged from 7.9 in Croydon to 22.2 in Norwich; Birmingham 18.6, Bolton 15.4, Cardiff 15.5, Gateshead 15.5, Hull 15.9, Leeds 16.2, Leicester 15.0, Liverpool 21.8, London 17.5, Manchester 17.4, Newcastle-on-Tyne 16.8, Nottingham 20.1, Portsmouth 9.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 26, 1894, TO JUNE 1, 1894.

FIRST-LIEUT. WILLIAM H. WILSON, assistant surgeon, now on duty at Fort Leavenworth, Kansas, will proceed at once to Camp Merritt, Montana, and report for assignment to temporary duty at that post.

NEW HAMPSHIRE MEDICAL SOCIETY.

The one hundred and third anniversary meeting will be held at G. A. R. Hall, Concord, Monday and Tuesday, June 18 and 19, 1894.

MONDAY, JUNE 18TH.

Medical papers and communications: "On the Prevention of Communicable Diseases," D. Edward Sullivan, M.D., Concord. Discussion opened by Wm. Child, M.D., New Hampton. "Sleep, How Best Induced in Certain Pathological Conditions," J. B. Raynes, M.D., Lebanon. Discussion opened by W. T. Smith, M.D., Hanover. "On Puerperal Infection," J. Elizabeth Hoyt, M.D., Concord. Discussion opened by John W. Parsons, M.D., Portsmouth. "Retrospective Glances," A. G. Straw, M.D., Manchester. "Report on Bone Surgery," D. S. Adams, M.D., Manchester. Discussion opened by Robert Burns, M.D., Plymouth, who will also report a case of "Exsection of the Astragalus." "Report on Empyema," William H. Lyons, M.D., Manchester. Discussion opened by G. C. Blaisdell, M.D., Contoocook. "On the Differential Therapeutics of Strophanthus and Digitalis," W. K. Wadleigh, M.D., Hopkinton. Discussion opened by Henry Dodge, M.D., Webster.

There will be a meeting of the Council at 7.30 P. M.

After the meeting of the Council (probably about 8.30 P. M.), the members of the association residents of Concord will welcome the Society in the G. A. R. Hall, and will entertain the members and their friends with a lecture on "Potable Water," by Prof. E. J. Bartlett, of Hanover, after which there will be a meeting of the alumni of Dartmouth Medical College.

TUESDAY, JUNE 19TH.

"On the Pathology and Methods of Treatment of Hypertrophic and Atrophic Rhinitis - with Especial Reference to the Work of the General Practitioner," Albert Pick, M.D., Boston, Mass. "On Laceration of the Cervix Uteri," F. A. Stillings, M.D., Concord. Discussion opened by M. W. Russell, M.D., Concord. "Glimpses of Fifty Years in the Medical Profession," Cyrus K. Kelley, M.D., Plymouth. "On Sanitation in Mexico," G. P. Conn, M.D., Concord. "On the Importance of the Early Recognition of Certain Diseases of the Eye by the General Practitioner, with Suggestions Regarding Management," H. W. D. Carville, M.D., Manchester. Discussion opened by Geo. Cook, M.D., Concord. President's Address, Samuel P. Carbee, M.D. Introduction of officers.

The Anniversary Dinner will be served at the New Eagle Hotel at 1 P. M.

EXHIBIT. - Exhibitors will use the banquet-room adjoining the assembly-hall, which will be in charge of Dr. Day, of the Committee of Arrangements.

GRANVILLE P. CONN, M.D., Secretary, Concord, N. H.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY. - The annual meeting of the Society will be held on Tuesday, June 12, 1894, at 1 o'clock, P. M., in the hall at 19 Boylston Place, Boston.

The usual business of the annual meeting will be transacted, and the following communications will be presented:

1. "What Cases Shall the Medical Examiner View?" J. A. Mead, M.D.
 2. "Suicide or Homicide? A Medico-Legal Diagnosis." C. S. Holden, M.D.
 3. "Comments on a Case of Homicide." A. H. Hodgdon, M.D.
- Fellows of the Massachusetts Medical Society are invited to be present.

Z. B. ADAMS, M.D., President.

F. W. DRAFER, M.D., Recording Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Home Dumb Bell Drill. Robert J. Roberts. Springfield, Mass.: Triangle Publishing Co.

Measurements of the Chest and Lung-Capacity. By Edward O. Otis, M.D. Reprint. 1894.

Neurasthenia, Neurasthenia and Neurasthenia. By C. H. Hughes, M.D., St. Louis, Mo. Reprint. 1894.

Self-Inflicted Injury in a Case of Chronic Mania. By Chas. B. Mayberry, A.M., M.D. Reprint. 1894.

Tenorrhaphy by Means of the Suture at Distance of Catgut, with Report of Case. By Emanuel J. Senn, M.D., Chicago. Reprint. 1894.

Treasury Department, Quarantine Laws and Regulations of the United States, April 26, 1894. Washington: Government Printing Office. 1894.

Report of the Rush Hospital for Consumption and Allied Diseases, from February 1, 1892, to February 1, 1894, with the Second Report of the Women's Board of the Rush Hospital, Philadelphia.

Addresses.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.¹

BY REGINALD H. FITZ, M.D., BOSTON.

MR. PRESIDENT AND FELLOWS OF THE MASSACHUSETTS MEDICAL SOCIETY:—With the advancement of learning, and the progress of civilization, it has been found necessary for those in authority to exercise more and more control and restraint upon such as are engaged in the practice of medicine.

As it became evident that the name of physician or surgeon was offered in excuse for the grossest ignorance or neglect, or to incite the actual destruction of human life, laws were passed to aid the victim of malpractice, and to punish the criminal abortionist.

When it appeared that sane persons were sometimes, and perhaps for the worst of motives, placed under restraint, justified only in the case of lunatics, a physician's certificate became necessary for the commitment of the insane.

The public has learned that the surest way of controlling the ravages of contagious disease is by the isolation of the earliest cases, and that for the protection of the well, even arbitrary measures of isolation may be found necessary. It, therefore, makes it the duty of the physician to notify immediately the proper authorities when he knows that he has seen a case of cholera or small-pox, diphtheria or scarlet fever, that the community may rest assured that suitable measures are being taken to protect the healthy. Elaborate and costly quarantine methods, useless without the services of intelligent, skilful and especially trained physicians, are established for the same purpose. In addition, vaccination, compulsory if need be, must be guaranteed by the physician to promote the same object.

He must make a return of the birth at which he assists, and must furnish a certificate of the cause of death. When there is reason to suppose that the latter has occurred under suspicious circumstances, the community orders that these shall be satisfactorily investigated by physicians of its own choice, if it sees fit.

The people thus demand, and submit with more or less eagerness or readiness to certain attempts at regulating the practice of medicine. They admit the necessity of the control, and they require qualifications, which only combined intelligence, education and honesty can provide. They seek for them in physicians, and expect the latter to possess them.

It is well recognized among those possessing the best opportunities for judging that patients are at times treated with reckless ignorance or negligence, and die in consequence; but no verdict of homicide is rendered. Ignorant and unskilful persons have often assumed to treat patients in a medical way, have caused injury, and have not suffered civil damages. Equally ignorant and unskilful pretenders to practice do not know the symptoms of contagious disease, do not suspect its presence, make no report to the proper authorities, suggest no isolation, and are the direct cause of the spread of diphtheria, of scarlet fever and the like from house to house and from district to district. The physician's record of the cause of death not infrequently conceals criminal abortion, sometimes manslaughter,

and is often indicative of such ignorance as to be wholly worthless.

Nowhere in the Union is the possibility of these evils greater than in Massachusetts. In this State any one who chooses may practise medicine. He has but to announce himself a physician and he becomes one. He may assume a title to which he has no claim, and may place a forged certificate upon his walls. He may advertise himself a graduate of any institution he prefers; may claim to have accomplished any number of cures of what have been pronounced incurable disease. He may promise preventives and specifics against any and all maladies; he may publicly announce the most glaring untruths—all for the sake of deceiving and fleecing a credulous public—and the law cannot interfere with his actions. We are repeatedly told that our law makes no distinction between the various schools of medicine, or between the various kinds of practitioners. Members of this Society, homœopaths, electricians, clairvoyants, faith-curers, mind-healers, Christian scientists, are alike legally qualified as physicians. Since the people demand, at times under penalty, services from physicians which only intelligence, education and honesty can supply, and since it is a matter of common knowledge that many stupid, ignorant, and dishonest pretenders to practise exist, it is clearly the duty of the State to discriminate between the two, to legally qualify those who deserve the confidence of the people, and to disqualify those who are often the abettors of crime, the victimizers of youth and the constant source of danger to every member of the community.

The object of such legislation is unmistakable. It is for the protection of the entire community, but especially for that portion of it less favored by education or fortune, by experience or knowledge. Its design is to promote their health, happiness and prosperity by giving them a means of deciding to whom they shall apply for intelligent, skilful and honorable aid in the time of need, often so sudden and unexpected in its coming. It enables them to determine by the only feasible means who is educated and who is not, what physicians are deserving of esteem and consideration, and what practitioners are pretenders, sometimes honest, perhaps, usually specious and presumptuous, and generally wofully ignorant.

To license the physician does not imply that he is not to treat his patients in any way he or they may prefer. It should mean that he is to show, before being allowed to treat disease, that he can discriminate between those which are dangerous to the individual and those which are a source of peril to the public. The former may, perhaps, take his life in his own hands, but he should not be allowed to imperil that of his neighbors.

Such a law offers no protection to the licensed physician, who can take care of himself. His education and opportunities have taught him to whom he is to go for suitable advice. Nor does it favor his occupation, since the more unskilful or negligent treatment in the community the more the demand for the services of the skilled and upright physician.

The many who ask for this protection and appreciate its need, suffer from the few, who, ignorant of the necessity, are deceived by false pretences, or are blindly devoted to a theory.

The numerous attempts at the legislative control of medical practice which have been made in the past

¹The Annual Discourse before the Massachusetts Medical Society, delivered June 13, 1894.

twenty-five years show that these aims may be accomplished to a certain extent. Every effort meets with opposition, and it is to the nature of the latter and the arguments it offers that your attention is now requested.

Such opposition is diverse and its motives extremely mixed.

On the one hand is to be found the entire class of those likely to be shown ignorant, unskilful, dishonest or corrupt. These are encouraged and supported by those whose occupation it is to systematically oppose all antagonistic legislation — for a consideration. On the other hand we see intelligent theorists and educators, at times leaders in thought and morals, who object to the infringement of personal rights, or the exercise of paternal care by the government. With these are associated respected leaders of the profession who have vigorously and persistently struggled for the highest possible standard of medical qualification, and oppose or discourage all measures which fall short of it. Thorough supporters of some medical legislation, they are determined opponents of all plans of which they cannot approve. These leaders of the opposition are followed by a considerable number of citizens, insufficiently educated, often ill-balanced, and frequently influenced by arguments of the most specious and superficial character.

In general the grounds for the opposition to the legislative control of the practice of medicine are the following assertions:

It invades personal liberty.

It legislates for a class.

It tends to obstruct the progress of therapeutics.

It is unnecessary.

It is not wanted.

It has proven a failure.

Let us consider these somewhat in detail:

It is claimed to be a violation of personal liberty, since it denies to some their right to pursue the occupation they desire and to others the right to select as medical adviser any person they please.

Herbert Spencer is usually quoted as the leading exponent of this view. He says:²

"If it is meant that to guard people against empirical treatment, the State should forbid all unlicensed persons from prescribing, then the reply is, that to do so is directly to violate the moral law. . . .

"The invalid is at liberty to buy medicine and advice from whomsoever he pleases; the unlicensed practitioner is at liberty to sell to whomsoever will buy. On no pretext whatever can a barrier be set up between them without the law of equal freedom being broken; and least of all may the government, whose office it is to uphold that law, become a transgressor of it.

"Moreover this doctrine, that it is the duty of the State to protect the health of its subjects, cannot be established, for the same reason that its kindred doctrines cannot, namely, the impossibility of saying how far the alleged duty shall be carried out. Health depends upon the fulfilment of numerous conditions — can be 'protected' only by ensuring that fulfilment; if, therefore, it is the duty of the State to protect the health of its subjects, it is its duty to see that all the conditions of health are fulfilled by them . . . enact a national dietary; prescribe so many meals a day for each individual; fix the quantities and qualities of food, both for men and women; state the proportions of fluids, when to be taken, and of what kind; specify the amount of exercise, and define its character; describe the clothing to be employed; determine the hours

of sleep, allowing for the difference of age and sex . . . and to enforce these regulations it must employ a sufficiency of duly qualified officials, empowered to direct every one's domestic arrangements."

It is to be remembered that this argument of Mr. Spencer is directed against placing restrictions upon "empirical treatment," which is regarded as a violation of the moral law. But let us quote further:³

"Let it be conceded that very many of the poorer classes are injured by druggists' prescriptions and quack medicines. . . .

"Inconvenience, suffering and death are the penalties attached by nature to ignorance, as well as to incompetence — are also the means of remedying these. . . . All means which tend to put ignorance upon a par with wisdom, inevitably check the growth of wisdom. Acts of parliament to save silly people from the evils which putting faith in empirics may entail upon them, do this, and are therefore bad. Unpitiful as it looks, it is best to let the foolish man suffer the appointed penalty of his foolishness. For the pain — he must bear it, as well as he can; for the experience — he must treasure it up, and act more rationally in the future."

This argument of more than forty years ago is persistently brought forward whenever the question is raised of the control of medical practice by the State. It is usually overlooked that it relates especially to prescribing, whereas the practice of medicine includes other considerations than that of providing means of treatment.

Despite the reasoning of Mr. Spencer the government finds it necessary to take certain steps, theoretically objectionable, for the protection of the health of the individual. It does not prescribe the number of meals per day, or the proportion of fluids and solids, the amount and character of the exercise, the kind of clothing and the hours of sleep. It does, however, insist that food offered for sale shall be unadulterated and wholesome; that water-supplies shall be uncontaminated; that noxious trades shall be rendered, as far as possible, harmless; that clothing shall be made under certain conditions. The State cannot protect the health of its subjects in every respect; but it everywhere endeavors to accomplish something. Even Mr. Spencer may be quoted in approval:⁴

"He who contaminates the atmosphere breathed by his neighbor, is infringing his neighbor's rights . . . and in the discharge of its functions as protector, a government is obviously called upon to afford redress to those so trespassed against."

Professor Huxley's name is usually coupled with that of Mr. Spencer as an opponent to placing restrictions upon the practice of medicine. His words are as follows:⁵

"In my judgment the intervention of the State in the affairs of the medical profession is to be justified . . . simply and solely upon the ground that the State employs medical men for certain purposes, and as employer, has a right to define the conditions on which it will accept service. It is for the interest of the community that no person shall die without there being some official recognition of the cause of his death. It is a matter of the highest importance to the community that in civil and criminal cases, the law shall be able to have recourse to persons whose evidence may be taken as that of experts; and it will not be doubted that the State has a right to dictate the conditions under which it will appoint persons to the vast number of naval,

² Social Statics, 1851, 377.

³ Op. cit., 372.

⁵ Nineteenth Century, 1884, xv, 228.

Social Statics 1851, 373.

military and civil medical offices held directly or indirectly under the government. Here, and here only, it appears to me, lies the justification for the intervention of the State in medical affairs."

Although this plea that the regulation of the practice of medicine is a violation of human rights has regularly been brought forward for the purpose of exciting sympathy, it has repeatedly been declared by the courts, except in New Hampshire, to be invalid.

It is best answered in the words of Judge Williams :

"In a certain sense it is true that every man has a natural right to follow out the bent of his inclination, and be a clergyman, a lawyer, a doctor, a scavenger, a peddler, an auctioneer, just as he may choose. But, it is not true that a man can practise any one of these professions or occupations except he does it upon such terms as the law imposes, and the law can impose just such terms upon any one of these professions or employments as the legislators in their discretion deem best for the interest of the community. . . .

"The right to practice medicine is a mere statutory privilege, subject to be changed at any time by the legislature."

It is claimed to be class-legislation, producing a monopoly, and, therefore, unconstitutional. We have again a statement, which is offered to excite sympathy, although its illegality has been demonstrated. It is everywhere recognized that legislation designed for the welfare of the people is the duty of the State, and is approved, if not demanded, by the public. The only question is to what extent shall such class-legislation be carried. The people alone are to decide. Licenses are given to peddlers, plumbers and apothecaries, to dealers in liquor, milk and oleomargarine. Pilots must show a familiarity with the dangers to navigation in the waters through which they undertake to guide vessels, before they can be permitted to take charge of them. Surgeons must be examined as to their medical and surgical knowledge before they can be appointed to the service of the militia. These are but a few of the illustrations that such class-legislation as is contemplated in the licensing of physicians is taking place constantly and with uniform approval. It does not create a monopoly, since it does not limit the practice of medicine to any particular sect or school. Any person can still become a physician by taking the necessary steps to secure a proper preparation for an occupation which is generally conceded to be one of great responsibility, and one demanding a various training. What is open to all is no monopoly. But this objection, too, has been definitely settled by the decision of the Supreme Court of the United States, given by Mr. Justice Field in the case of *Dent v. West Virginia*.⁷ According to him

"there is no arbitrary deprivation of such right where its exercise is not permitted because of a failure to comply with the conditions imposed by the State for the protection of society. The power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations as, in its judgment, will secure or tend to secure them against the consequences of ignorance and incapacity at well as of deception and fraud. . . . The nature and extent of the qualifications required must depend primarily upon the judgment of the State as to their necessity. . . .

"We perceive nothing in the statute which indicates an intention of the legislature to deprive any one of his right. No one has a right to practice medicine without having the necessary qualifications of learning and skill;

and the statute only requires that whoever assumes, by offering to the community his services as a physician, that he possesses such learning and skill, shall present evidence of it by a certificate or license from a body designated by the State as competent to judge of his qualifications.

"There is nothing of an arbitrary character in the provisions of the statute in question; it applies to all physicians, except those who may be called for a special cause from another State; it imposes no conditions which cannot be readily met."

We are told that a law to license medical practitioners will obstruct the progress of therapeutic knowledge, since certain so-called healers and curers will refuse to be examined for a license. This class is likely to include the hydropaths, psychopaths, nature-paths, omnipaths, mind-healers and faith curers, spiritualists, mesmerists and Christian scientists, botanic, hygienic and Indian physicians, the seventh son of a seventh son, and the retired clergyman whose sands of life have nearly run out, and the like.

They will refuse to be examined, since they are conscious of their inability to pass an examination, or they may claim that they will suffer a loss of therapeutic power by acquiring knowledge of the anatomy and physiology of the body or of the symptoms and diagnosis of disease. These people should not be licensed unless they submit to the requirements which are deemed sufficient to test the qualifications of physicians. There need, then, be no interference with such therapeutical experiments as they and their patients see fit to carry on, at their own exclusive risk.

The demand for such persons, under some title or other, will always exist. There are many worthy citizens, some of a high degree of intelligence in many things, who firmly believe that most remarkable and wonderful cures have been accomplished by such "healers." They are told, and are willing to believe, that the latter possess the gift of healing, and have "divined" the successful treatment of disease. Such miraculous cures have been reported in all ages, but the methods of their accomplishment have proven no commendable additions to therapeutic knowledge. They are recognized as dependent upon mental peculiarities, by no means to be encouraged, of the patient, and equally striking and frequently objectionable characteristics of the practitioner.

We are told that the latter will refuse to be examined because he may lose his power. It is to be remembered that Christian scientists are not the only practitioners who have obtained successful results by the use of faith. Dishonest charlatans have been as fortunate as religious enthusiasts, and eminent physicians have proven quite as successful as either. Mental therapeutics may accomplish wonderful results in certain instances, but the ability to use them is in no respect limited to persons ignorant of any claim to medical knowledge. It may well be admitted that there are some patients who will recover under certain therapeutists, but not when licensed physicians attempt their treatment. It is unfair to deprive such individuals of this possibility unless there is a risk to others.

Even Mr. Spencer recognizes the importance of restraining those "who contaminate the atmosphere," and no person should be allowed to undertake the treatment of the sick without previously having given evidence of a sufficient knowledge of the means of recognizing contagious diseases and the measures to be adopted to check their dissemination.

⁷ Rep. Ill. State Board of Health, 1885, vii, 432.
⁸ 129 United States, 114.

There are those who claim that were there no other objection to the further control of medical practice it is unnecessary, since it would add but an infinitesimal degree of security to the citizen's chance of being faultlessly treated when sick, and the people are already protected by the existing laws against malpractice and manslaughter.

No honest and intelligent physician of practical experience claims to treat faultlessly a sick person. No sensible physician, familiar with the seats and causes of diseases, believes that it ever will be possible to always treat faultlessly the sick person, provided it is meant by this phrase to cure him of his disease. But the treatment of the sick person is but a part of the doctor's duty. To enable his patients to avoid disease, to prevent them from becoming dangerous to others, are not the least important parts of his occupation. Education alone, in addition to intelligence and honesty, can enable him to promote these aims.

The practise of Massachusetts courts in medical cases during the greater part of the present century was based on the decision of Chief Justice Parsons in 1809,⁸ that if the patient's death is the result of treatment honestly administered, the person prescribing is not guilty of manslaughter. It is only within the past ten years that this decision has been reversed⁹ by the declaration of Judge Holmes that one who practises with reckless ignorance or negligence is liable for homicide, and for civil damages if he causes injury by ignorant or unskilful practice.

The number of cases of death due to the gross ignorance or negligence of the charlatan is unknown. Some are probably familiar to many members of this Society. I merely allude to the statement of the court that Thomson, who gave his name to Thomsonianism, without reasonable doubt caused the death of his patient by unskilful treatment. That Franklin Pierce was the cause of his patient's death by ordering the application of flannels saturated with kerosene oil for some three days. That a barber in Illinois, by the unscrupulous methods of the quack, obtained a considerable practice, and caused "the brutal butchery of a mother in labor and her unborn offspring."¹⁰

Other instances, occurring in his own experience, are mentioned by the medical examiner for Suffolk County, Dr. F. W. Draper, in his argument before the Public Health Committee of the Legislature, February 14, 1894.

Dr. F. B. Harrington, of Boston, informs me of a poor woman who was suffering from copious and continuous hæmorrhages from uterine cancer. These were controlled in accordance with his advice. She later came under the care of a Christian scientist, who told her there was nothing the matter, and that she might go out and pursue her daily occupation. The bleeding returned, but the advice to go about was persisted in. A hæmorrhage took place while she was away from her home and caused her death shortly after her return. Similar illustrations of death following the gross ignorance of persons claiming to cure disease might be produced almost without limit, and the existing laws fail to prevent them.

But it is claimed, if the person is injured as a result of negligence or lack of skill, a suit for damages

may be brought. As a rule such cases do not come to trial. Those which are brought before a jury are usually directed against educated physicians of means for various motives. The hospitals of every large city are constantly resorted to by unfortunates who have been induced to apply to ignorant and pretentious charlatans for medical or surgical aid, and have suffered grievous injury from following their advice. If the sufferer realizes the cause of his misfortunes, he may be unable to secure the services of counsel. If he should be successful in this effort he usually recovers nothing, since the charlatan either has no visible means, or leaves the State in time to escape an unfavorable verdict. Much more often he suffers in ignorance of the cause of his suffering.

Not only are the laws against manslaughter and malpractice insufficient to protect the community, but those intended to guard against the spread of contagious diseases are alike ineffective. The ignorant pretender, under whatever title he or she may appear, often does not recognize the nature of the contagious disease. No suggestion is made of isolation. Well children are allowed to play with the sick. All are permitted to go to school, and the outbreak of scarlet fever or diphtheria is thus promoted, which could have been avoided by the intelligent precautions of an educated physician. I have before me the advertisement of a person employed in a street-car, announcing "Diphtheria cured in all stages." Cases were taken to him for treatment and were not reported to the Board of Health. The law concerning the notification of contagious diseases could not apply to this person, since he did not call himself a physician; neither was he a householder, and he could have pleaded ignorance of the nature of the malady. The cases under his treatment which were about to die were referred, at the last moment, to physicians who were then called upon to give such aid as was possible. Existing laws do not protect the community from such persons as these.

We are told that the legislation is not wanted, since the people do not ask for it. The history of medical legislation in the various States of the Union furnish direct evidence to the contrary. Appeals are made by clergymen, lawyers, authors, physicians and public-spirited men of every degree. Physicians, it is true, as a rule, take the initiative, since the evils resulting from the ignorance or lack of skill of the pretender are usually first brought to their notice. The grievously sick or dying victims of the abortionist, the moribund patient deceived by the promises, or injured by the statement of the charlatan, eventually seek aid from the educated physician in good standing, often at a time when death is but a few hours removed, or permanent deformity has been made a necessity, or conditions often bordering upon insanity have been reached.

It is this experience of the doctors which has opened the eyes of the people, and it is the enlightened common-sense of the latter which has decided upon the need of the regulation of the practice of medicine throughout nearly all the United States.

Finally, we are told that the State control of medical practice has proven a failure. At the present time some sort of law intended to regulate the practice of medicine exists in nearly every State and Territory of the Union. These laws differ widely in

⁸ Commonwealth v. Samuel Thomson, 6 Mass. Rep., 124.

⁹ Commonwealth v. Franklin Pierce, 128 Mass. Rep., 166.

¹⁰ Rep. State Board of Health, Ill., 1884, vi, 10.

air scope and in their results, but all have the same end in view — the protection of the people. As some have failed to produce the desired result, suitable amendments have been made. Some of the most recent laws are those which promise to be the most efficient, and it would indeed be astounding were a series of failures likely to act in favor of a renewal of the same undertaking. On the contrary, the failure of the earlier attempts at medical legislation has led to the avoidance of the causes of failure, and the reports from various States give encouraging evidence of what has been accomplished.

(To be continued.)

THE INFLUENCE OF ANIMAL EXPERIMENTATION ON MEDICAL SCIENCE:

ABSTRACT OF THE PRESIDENT'S ADDRESS BEFORE THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS, AT ITS THIRD TRIENNIAL MEETING, WASHINGTON, D. C., MAY 31, 1894.

BY ALFRED L. LOOMIS, M.D., OF NEW YORK.

THE specific problems with which medical science deals are questions of the relative influence of multiple forces on the production of given results. Only the deepest ignorance can fail to recognize that the forces concerned in the simplest change of inorganic nature are so numerous and their relations so complex that they defy recognition under uncontrollable conditions, while in the organic world the task is even more hopeless. Experimentation, therefore, in which one or more of the involved forces can be controlled, becomes an absolute necessity in all scientific investigation. However clear the mental analysis, however accurate the logical demonstration from cause to effect, it is possible by experiment alone to prove that no involved force has been overlooked. Is it not strange that medicine should be denied the right to follow those imperative methods of scientific research which are so unquestionably accorded to every other science? It is not a little surprising that men with an appreciation of the necessity of experimentation should for so long have preferred to be its subjects, and that even to-day so many refuse to yield the place to animals. For example, in widespread epidemics we note the effects of an infection on perhaps half a million of human beings, with a great sacrifice of human life. On the other hand, we study in laboratories the cause of the epidemics with a comparatively small sacrifice of animal life.

In entering upon the consideration of this subject the author fearlessly laid down this proposition: Every distinct advance, every established principle, and every universally accepted law of medical science has been in the past and will be in the future the direct, if not the immediate result of animal experimentation. He then passed to a review of some of the obvious and conclusive proofs of this proposition.

It is not too much to claim that during the latter half of the present century the results obtained from experiments on animals have done more than all the observations of the preceding centuries to raise medicine from conditions of vagueness to conditions of exactness. From the time of Aristotle, who proved that the blood, brain and spinal marrow in animals have no sensation, down to the present day, animal experimentation has been practised by all investigators who have

gained any definite knowledge of the more important phenomena of animal life.

Galen must be regarded as the pioneer in this line of investigation. By his experiments on living animals he showed that arteries contain blood, that the lungs passively follow the movements of the chest, and that the diaphragm although the most important is not the only muscle of respiration. Further, by section of the spinal-cord and of the recurrent laryngeal nerve, he demonstrated the nervous control of the voice and explained the mechanics of respiration. He also advanced the knowledge of the functions and movements of the alimentary canal and laid the foundation of our knowledge of the functions of the brain and spinal-cord. The results of his experimental work are now as conclusive as when first made, and are the only part of his vast labors which have stood the test of modern investigation.

From Galen's time to Harvey's great discovery, little experimental work was done; and during this time medicine ceased to advance. Harvey's demonstration of the circulation of the blood in 1620 rests entirely on animal experimentation, as is shown by his writings.

The next series of important investigations on animals were applied by Galvani and Volta to the nervous system.

In 1664 Robert Hook, by inflating the lungs of animals by means of a bellows, demonstrated artificial respiration. The experiments of Boyle and of Priestly in the seventeenth century laid the foundation of our knowledge of the respiratory process.

The injection of fluids into the blood-vessels of animals was first done by Dr. Christopher Wren. In 1666 Richard Lower performed the first transfusion, and the following year Dr. Denis performed the same experiment on man.

Haller, in the middle of the eighteenth century, proved that all motion in the human body proceeds in great measure from the brain and spinal-cord. He also demonstrated that irritation of the peripheral end of a severed nerve produced contraction in the muscle to which it was distributed. This was followed by the experiments of Sir Charles Bell. At the beginning of the present century Magendie demonstrated the difference between the anterior and posterior roots of the spinal-cord. His experiments on animals by the injection of various medicinal substances enabled him to lay the foundation of the doctrine that remedies exert their action upon special structures and organs. In this line of work he was followed by Claude Bernard. It is perhaps a conservative statement, that, excluding the medicinal foods, ninety per cent. of all our medication is made definite and valuable by this principle alone. Magendie, Bernard and Loget established by their experiments the doctrine of recurrent sensibility, which was followed by the discovery of Marshall Hall of reflex action of the spinal-cord. The doctrine of vaso-motor action was practically demonstrated by Bernard's experiments.

John Hunter, in 1785, by his experiments on dogs, established the fact that injuries to healthy arteries were soon repaired, and that ulceration after ligature occurred only when the vessel was diseased. The experiments led him to apply ligatures for the cure of aneurism to healthy portions of the arteries. Hunter first learned by experiment on pigeons and young pigs that the growth of bone was from the periosteum.

As we witness some capital operation performed at the present day without pain, almost bloodless, followed neither by fever nor suppuration, we may ask how far these results are due to experimentation on animals. The effect of chloroform was discovered through experimentation on the ant. Simpson practised and perfected his use of chloroform on animals before he placed his first patient in a state of anesthesia. That other great alleviator of pain was first practised on dogs.

These results are sufficient to exalt animal experimentation to the first place, as a means of scientific advancement.

The first important step in the field of etiology based on animal experimentation was made in 1850, when it was proven that splenic fever could be communicated from animal to animal by inoculation, and the first hint of bacteriological study was given by the discovery constantly in the blood of these animals of little thread-like bodies.

About the same time Virchow made his observations on trichinosis. M. Viyaman inaugurated an important era when he established the fact that tuberculosis was an infectious disease. The invaluable studies of Pasteur introduced us into a new world of knowledge. He not only obtained pure cultures of organisms, but also studied their life-history and placed bacteriological science on a firm basis. The crowning glory of Pasteur's work came with the discovery of the attenuation of bacterial toxic products. It is not possible to point to a work of richer or grander promise, yet it is a work that was possible only by experiments on living animals. The application of Pasteur's doctrine by Mr. Lister to the antiseptic treatment of wounds has been a full confirmation of this principle.

The discovery of the bacillus tuberculosis by Koch marks another brilliant epoch in medical science.

Within the past two decades animal experimentation has accomplished more in the field of cerebral localization than all the preceding centuries of carefully recorded cerebral symptoms studied in the light of post-mortem investigation. It has opened a new field of operation.

From this history, it seems evident that most if not all of the real advances in medicine have been made possible through experimentation. This review of what our profession has done is not a plea for mercy — it is a cause for pride. So long as the moral and spiritual development of mankind remains the supreme purpose of creation, medical science can claim equal honor with the science of God, and in the conflict with physical evil must be the first to meet the foe. Until Infinity repeals the edict which gave man power over all created things, the right to claim the services of the brute can never be denied him who devotes his life to the service of mankind. We glory in our experimental work because we know the tenderness of cruelty, the balm of pain, the life whose birth is only in the throes of death. From the ignorant we expect to receive only censure; but from those who in the valley of the shadow of death have learned to know what manner of men we are, I have faith to believe that the reply will come, "We have trusted you with the lives of our loved ones, we entrust to you God's dumb creatures."

THE Pope has decided that cremation, while heretical in principle, may be allowed under special conditions.

Original Articles.

STRANGULATION OF MECKEL'S DIVERTICULUM CAUSED BY VOLVULUS OF THE ILEUM.¹

BY J. W. ELLIOT, M.D., BOSTON,
Surgeon to the Massachusetts General Hospital.

THE patient, a man about thirty years old, was brought to the accident room of the Massachusetts General Hospital, October 17, 1893. He had been sick for four days, with vomiting, chills and abdominal pain. The bowels had moved twice in the previous forty-eight hours. The temperature was 103.6°, pulse 160, respiration 35.

The abdomen was distended, tympanitic and exquisitely tender, especially to the right of, and below the umbilicus. Free fluid was evidently present in the peritoneal cavity. Under ether, a large hard mass was plainly felt in about the middle of the abdomen, just below and slightly to the right of the umbilicus. Both Dr. M. H. Richardson and I considered it a severe case of appendicitis. Dr. Richardson also kindly assisted me with the operation, which proved to be the most difficult and perplexing operation I ever saw.

The abdomen was opened by a vertical incision two inches inside the anterior superior spine of the ileum. A quantity of turbid fluid escaped. The appendix was examined, and found to be normal. On exposing the mass near the middle of the abdomen by extending the incision, it looked like a large dilated and gangrenous knuckle of intestine, but without a mesentery. It sprang from the lower part of the convex surface of the ileum, and was tightly twisted at its point of attachment to the bowel. It extended upwards into a dense mass of adhesions, and when dissected free was found to be attached to the under surface of the umbilicus. It was then evident that we were dealing with a Meckel's diverticulum in a strangulated and gangrenous condition. It was seven inches long, and about the same size as the ileum. During the dissection, the gangrenous diverticulum was ruptured, allowing the escape of a quantity of fecal-smelling fluid into the peritoneal cavity. The diverticulum was removed, and the opening in the ileum was closed with several Lembert sutures. The ileum at this point was found twisted on itself and held in this abnormal position by adhesions. The gut was not wholly obstructed by the twist. On untwisting the bowel old adhesions were found extending deep into the mesentery so as to shorten it at one point. This contraction of the mesentery seemed to have caused the volvulus of the ileum. The diverticulum having its outer end fixed at the umbilicus, was twisted and strangulated at its base by the turning over of this coil of the ileum. The gangrene of the diverticulum was most intense near the ileum, the end at the umbilicus being only moderately inflamed. This is explained by the fact that the diverticulum has its blood-supply from the mesenteric artery of the ileum.

The operation was severe, causing the pulse to rise to 180 at the end. The patient, already septic at the time of operation (unfortunately the cultures of the turbid fluid found in the abdomen were lost), died of septic peritonitis on the second day.

As is well known, Meckel's diverticulum is due to the persistence or incomplete obliteration of the vitel-

¹ Read at the Congress of American Physicians and Surgeons at Washington, May 31, 1894.

line duct. It is usually small, and has its principal interest in the fact that it not infrequently acts as a band and causes intestinal obstruction.

Dr. R. H. Fitz,³ in a very valuable paper on this subject, quotes Roth² as calling attention to the origin of retention cysts from Meckel's diverticulum. "Such cysts are divided into two classes, according as their cavity is continuous or discontinuous with that of the intestine. The wall is composed of the various layers found in the intestine." Roth describes a cyst of this kind occurring in a child one year and four months old. "It was connected with the concave surface of the ileum, near the mesenteric insertion twenty-six inches above the ileo-cæcal valve. The pedicle having become twisted, a hæmorrhagic infiltration and necrosis of the mucous membrane had occurred, also acute peritonitis."

The case here reported is unique, but this case of Roth's resembles it in several important particulars. In both cases the diverticulum was strangulated by twisting of the pedicle, and acute peritonitis followed.

These cases are sufficient to establish the fact that strangulation of Meckel's diverticulum is one of the causes of acute peritonitis. This fact has an additional interest at the present moment in that the diverticulum resembles the vermiform appendix, and the two lesions may easily be confounded, clinically, as in the present case. While the diverticulum is often without a mesentery and is therefore freer and more likely to suffer from strangulation by twisting of its pedicle, yet it not infrequently has a mesentery; in which case it must be liable to the same pathological processes (though evidently much less frequent) as the appendix. Such cases are not wanting. Fitz mentions a case reported by Dr. Beale,⁴ where acute peritonitis followed perforation of a diverticulum, in the cavity of which were a cherry-stone, the coriaceous covering of several orange-pips and other substances; and also a case of adherent diverticulum described by Houston.⁴ This diverticulum was filled with a hard matter, apparently inspissated feces. "The omentum and intestines in the neighborhood were closely joined to the tumor by adhesions, the result of former inflammatory attacks, and the woman had complained for many years before her death of occasional severe pain in the abdomen."



The symptoms of inflammation of these two intestinal pockets are the same, as they both cause peritonitis. The only points in the differential diagnosis which the writer is able to suggest, are that a history of a discharge from the umbilicus (this occurred in a case of intestinal obstruction due to diverticulum in the practice of Dr. John Homans) would suggest the presence of a diverticulum, while a history of previous attacks of pain would be significant of either an inflamed appendix or diverticulum, as, according to Fitz, "In nearly one-half the cases of vitelline remains previous attacks of pain were recorded." The presence of a tumor or tenderness near the umbilicus should favor the theory of inflamed diverticulum as against the appendix. It will be remembered that in the case here reported a distinct tumor could be felt just below and slightly to the right of the umbilicus.

The only treatment to be thought of in such cases is prompt laparotomy and the removal of the inflamed or strangulated diverticulum. The special points to be observed in the operation are the careful stitching of the pedicle, as it often opens directly into the intestinal canal; also the careful ligation of the vessels, because the diverticulum is supplied by a branch of the mesenteric artery, which is the persistent omphalo-mesenteric artery, and may be of considerable size.

SUICIDAL GUNSHOT WOUND OF THE ABDOMEN; FÆCAL FISTULA; COMPLETE RECOVERY WITHOUT OPERATION.¹

BY P. RALPH EGAN, M.D.,
Assistant-Surgeon, United States Army.

THE older surgeons looked on gunshot wounds of the abdomen with feelings akin to despair. The mortality from these injuries under the most favorable circumstances amounted to over eighty per cent. In less fortunate cases it reached a hundred per cent.

Need we wonder that after the successful cases of Kocher and Bull, ten years ago, the motto became, "Laparotomy for diagnosis and treatment." It was the inevitable enthusiasm following a new and successful method of treatment. It is now, however, beginning to be modified before the tests of experience.

In military practice the difficulty of diagnosing a perforation, and the frequent necessity for immediately transporting the patient from the seat of action, generally caused laparotomy to be deferred. It will further be necessary to differentiate as far as possible between wounds of the various parts of the intestines.

It has always been a well-known fact that wounds of the large intestine were less fatal than those of the stomach and small intestine. Even wounds of the different divisions of the large bowel give different results. Assistant-Surgeon Otis, United States Army, writes:² "While few instances are observed of recovery from gunshot wounds of the transverse colon, many were seen of survival after perforation of the cæcum and ascending portion of the bowel, and a still larger proportion of recoveries was observed in wounds of the sigmoid flexure and other parts of the descending colon. . . . Nearly all were attended by stercoral fistulæ which commonly closed after a time, without operative interference, reopening at intervals, and

³ American Journal of Medical Sciences, July, 1894.

⁴ Virchow's Archiv, 1861, lxxvi, 377.

² Report of Proceedings of the Pathological Society of London, 1851-52.

¹ Descriptive Catalogue of the preparations in the Museum of the Royal College of Surgeons in Ireland, 1834, 1, 38.

¹ Read for the author at the April (1894) meeting of the Society of the Alumni of Charity Hospital, New York, by Dr. Walter Lester Carr.

² Medical History of the War of the Rebellion.

then healing permanently." He then gives a history of 59 recoveries, in 50 of which the stercoral fistulæ had completely closed.

In 1886, during the discussion of gunshot wounds of the intestines, Dr. W. T. Bull³ spoke as follows: "In conclusion, let me make one exception to the rule of treatment I have advocated, namely, to explore bullet wounds. It is in cases where the wound is situated in the posterior part of the abdomen, or in the lateral wall covered by the lower ribs, and there is no evidence of any wound anteriorly."

In the same debate, Dr. Parks, of Chicago, thought that sufficient data had not been offered on which to form a correct diagnosis. He thought the size of the firearm must be taken into consideration, as also the distance, shape of the bullet, its calibre, and that the result of the injury might be affected by the obliquity with which the missile entered the body. He then detailed the remarkable case of a thief who was shot while running away from his pursuers. The bullet was of 44 calibre, and struck him in the back. The next morning he went to the hospital, where it was found the ball had entered the back about four inches from the spinal column, and came out near the umbilicus. He never developed any serious symptoms, and left the hospital on the second day.

Dr. Bryant,⁴ believed laparotomy was a justifiable operation, but that it should not be attempted even in so-called favorable cases, unless the operator could avail himself of many of the recognized means of procedure necessary to combat the shock of the operation, and was sufficiently familiar with its steps to operate with accuracy and despatch.

Dr. Weir said: "Clinically, it is found that every case of such a wound (that is, penetrating,) does not justify laparotomy. When such a case comes under the eye of a surgeon, the collapse which he or she is in may, and too often does, prohibit utterly surgical interference. In only one condition is there an operation justifiable, and that is for the arrest of hæmorrhage which may be the cause of shock."

Before the International Medical Congress in 1887, fæcal extravasation was considered the only clear indication for operation (Hingston). The same year Sir William McCormac wrote: "Some degree of doubt must always exist on account of the necessary obscurity of the symptoms, except in the rare event of prolapse of the injured gut, fæcal extravasation appearing externally; or very free hæmorrhage from the wound." Operation, he thought, was practically useless after twenty-four hours had elapsed, or when general peritonitis and great collapse had set in.

In 1888, Reclus reported the recovery of three cases of perforation of the abdomen. He claimed as the result of experiment that perforation was not necessarily present in cases of penetration, and that therefore laparotomy need not be performed unless the signs were unmistakable. He advised firm compression of the abdomen and large doses of opium; and only when this treatment had failed was laparotomy to be performed.

Two years later, Dr. Lewis A. Stimson showed that the integral statistics of the principal hospitals in New York City to that date were as follows: ⁵ without operation, 28 cases (15 deaths, mortality 65 per cent.);

with operation, 16 cases (13 deaths, mortality 81.2 per cent.). He thought perforation occurred in all cases of penetration save when a small bullet has entered so that its course must lie through the liver, and those in which the ball has traversed the abdominal wall very obliquely. He concludes that in the present state of our knowledge it cannot be said that either interference or non-interference should be the rule of practice, and the surgeon may be guided by his own convictions and feelings, whether they lead him to seek to do as much good, or only as little harm as possible.

In the discussion, Dr. Wyeth thought the question of operation was then involved in as much obscurity as it had been nine years before.

In 1892,⁶ Luhe concluded, from 324 cases, including those of McCormac, Coley and Morton, that laparotomy was indicated in undoubted cases of perforation. He found the mortality in 152 cases of shot wounds was 62.9 per cent.; while for other forms of wounds it was 84 per cent. In those cases in which laparotomy was performed within the first twelve hours, the mortality was 58.2 per cent.; but in those cases in which it was delayed for a longer period, the mortality reached 79.5 per cent.; while the mortality in those cases in which the length of time was unknown was 82.4 per cent.

This shows that delay increases the mortality in operations after these wounds. The rule that immediate laparotomy is necessary, must, of course, have some exceptions, as in military practice where antiseptic precautions and the time necessary for the proper performance of the operation are wanting. He believes the formation of artificial ani will be often necessary, and that transportation should be prohibited during the first few days at least.

In the above papers the difference in the mortality according to the part of the intestine injured, as shown by Assistant-Surgeon Otis, seems to have been overlooked. The following case is cited in support of the correctness of his views:

F. W., colored, age twenty-four, was admitted to hospital on May 31, 1893, about 10.22 A. M. A number of petty robberies had been committed in the place. He was accused by his companions of being the thief. This so preyed on his mind that he tried to commit suicide. With this object he placed the muzzle of a 45-calibre Springfield carbine to the front of his abdomen. The stock he rested on a box about two feet high, then bending forward he pulled the trigger. The bullet entered in the mammary line just a little to the right and immediately below the lower edge of the false ribs on the right side. It made its exit just over the highest point of the innominate bone and about one-fourth of an inch external to the line of the outer border of the axilla. He was seen inside one-fourth of an hour after the accident. A slight amount of pallor existed. He had no hæmorrhage and no blood in his stools. The only sensation he experienced around the wound was one of numbness. There was nothing to indicate that a perforation of the intestines had occurred. It was concluded that if any portion of the intestines had been injured it was the ascending colon, and in view of the favorable results given by Assistant-Surgeon Otis, laparotomy did not seem justifiable. His wounds were dressed aseptically. He was given a liquid diet, and placed on his back. His temperature was sub-febrile in the evening, and thereafter

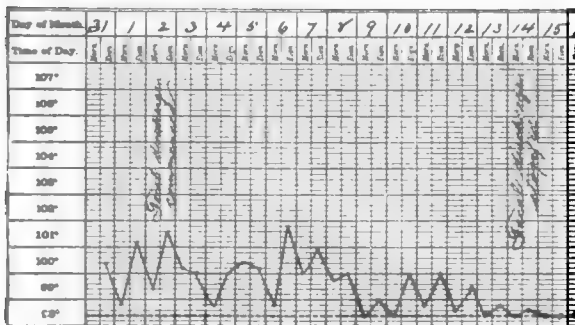
³ Medical News.

⁴ Medical Record.

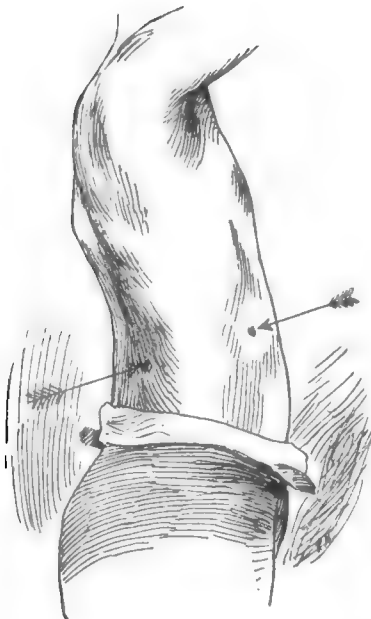
⁵ New York Medical Journal.

⁶ Centralblt. für Chir.

as shown in the accompanying chart. On the third day he began to lie with his knees drawn up. This position he explained was to relieve pain which had developed round the wound. At the same time a



slight odor was noticed in changing the dressing. It came from the posterior opening. During the night a quantity of fecal matter came out; and on the following day it amounted to over a pint, and necessitated frequent dressings. For the next ten days it decreased in quantity, and on the twelfth had completely ceased. The photograph was taken a little after this period when both wounds had closed.



As he suffered from pains on exertion, he was kept under treatment until July 20th, when he was discharged. The wounds never reopened; and he has continued to ride horseback and do ordinary work without any inconvenience. His general health remains excellent.

From the above citations, we may safely reach the following conclusions:

(1) That wounds of the large intestine are more liable to spontaneous cure than those of any of the other abdominal viscera.

(2) That antero-posterior perforation of the abdomen, though nearly always followed by perforation of the bowel, is not necessarily so, as shown by the remarkable case of Dr. Parks.

(3) That prolapse of the wounded intestine or fecal extravasation is alone diagnostic of a perforation.

(4) That if operation is indicated, it must be performed as soon as possible, and with the withdrawal and examination of only a small portion of the intestine at a time. The examined portion to be replaced and another section examined in the same way until a thorough search has been completed.

(5) That if the case is not seen for several hours after the accident, drainage by iodoform gauze should be alone attempted, as fibrinous adhesions have been found to occlude the wound and wall off the peritoneal cavity in a few hours.⁷

(6) That in military practice the impossibility of always taking antiseptic precautions, and the urgent necessity for transporting the patient to a base hospital, will often prevent the performance of laparotomy.

The introduction into warfare of the small jacketed bullet, projected with great velocity, will probably not modify the status of abdominal wounds in any material degree. The wounds will be more like a punched-out hole, with little, if any, contusion of the neighboring parts. Fatal hæmorrhage will be more prevalent, and there will be about four times more dead than wounded.⁸ There will also be more men killed and wounded in a given time by the new rifle. The wounds produced, if not immediately fatal, will, however, be more amenable to surgical skill, and much more promptly recovered from.⁹ More penetrating wounds of the abdomen will be liable to spontaneous recovery, while those that come to operation will show an increased percentage of recovery. The general opinion of military surgeons seems to be favorable to the new weapon, so far as experiment and its limited employment in actual warfare enable them to judge.

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THIRD TRIENNIAL MEETING, WASHINGTON, D. C.,
MAY 29, 30, 31 AND JUNE 1, 1894.

GENERAL SESSIONS.

(Concluded from No. 23, p. 575.)

FRIDAY AFTERNOON. — JUNE 1ST.

THE business meeting of the Congress was held at 1.30 P. M., the President, ALFRED L. LOOMIS, in the Chair.

DR. NEVINS B. HYDE presented, on behalf of the American Dermatological Association, the following resolution:

Whereas, The American Dermatological Association recognizes the importance of the undoubted existence of leprosy in North America, therefore

Resolved, That the Congress of American Physicians and Surgeons be requested to memorialize the Congress of the United States of America, with the view to the appointment of a commission of five to investigate the prevalence of leprosy in the United States of America and in the countries upon its borders, and to suggest means for the control of the disease.

DR. WILLIAM H. WELCH, of Baltimore, stated that

⁷ Abbe and McGraw.

⁸ Colonel Boonen-Rivera on the War in Chili.

⁹ Thurnwald, in Austria, as the result of experiment, has come to this same conclusion.

a bill had been presented in Congress prohibiting experiments on animals in the District of Columbia, and presented and moved the adoption of the following resolution:

Whereas, The attempts in other countries to regulate by legislation the practice of experimentation upon animals have proven most disastrous to the progress of medical science and art,

Resolved, That the Congress of American Physicians and Surgeons enters its most earnest protest against any legislation tending to interfere with the advancement of medicine by means of experimentation upon animals, conducted by properly-qualified persons.

DR. L. McLANE TIFFANY, of Baltimore, offered the following resolution:

Whereas, The army appropriation bill reduces the number of medical officers in the army by twenty-five, and also reduces the appropriation for the library of the surgeon-general's office from ten thousand dollars to seven thousand dollars,

Resolved, That it is the opinion of this Congress that these proposed reductions are unwise and are contrary to the best interests, not only of the army, but of the medical profession of this country, and of all who depend upon them for skilled professional services, and that we respectfully request our representatives and senators to so amend this bill as to prevent the reductions above referred to.

These three resolutions were adopted.

The question of amendment of the by-law relating to the place of meeting was brought up, and its consideration postponed until the next meeting, when it should be made the special order for the first day's session.

The Congress then proceeded to the scientific work. The first portion of the afternoon was under the direction of the American Laryngological Association, and the subject for consideration was

THE SURGERY OF THE ACCESSORY SINUSES OF THE NOSE.

DR. F. H. BOSWORTH, of New York, read the first paper, which was on

DISEASED CONDITIONS OF THE ETHMOIDAL SINUSES.

Diseases of these sinuses differ from diseases of the other sinuses in their anatomical peculiarities and in their symptoms. In the other sinuses there is one large single cavity; in the ethmoid we have a mass of small cells more or less completely separated from each other. In order to establish a radical cure, it would be necessary to open each one of these cells. This is impossible, and therefore the separating walls must be broken down and a single cavity formed.

Whereas, in the other sinuses the principal symptom is the occurrence of a purulent discharge, ethmoidal disease sets up a train of symptoms more or less neurotic in character, such as headache, intra-orbital pressure, sneezing, asthma, and interference with the action of the brain. Ethmoidal disease is more frequent than is commonly supposed. In the last five years 97 cases of ethmoidal disease had been under his care. There are three varieties of disease of the ethmoid, the extra-cellular myxomatous, intra-cellular myxomatous and purulent ethmoiditis. These varieties are really simply successive stages of one and the same affection. As the disease progresses, the mucous membrane may project into the nasal cavity in the form of small polypi. Another result may be crowding out of the middle turbinated bone, from ex-

tension of the ethmoid cells. The final result is suppuration, and the pus may be discharged through the anterior or through the posterior cells.

Treatment in these conditions should be instituted early, if possible, before the occurrence of suppuration. In acute ethmoiditis, the ordinary measures employed in acute rhinitis are indicated. Of all measures, he regarded the douche as the most valuable. One or two gallons of water, rendered saline and as hot as can be borne, should be passed through the nose twice daily. This is devoid of danger provided the patency of the nostrils is determined beforehand and the water is passed in the narrower nostril so as to obviate any interference with its discharge.

In the chronic stage, surgical treatment is demanded when other measures have failed. The object of the treatment is to relieve the intra-cellular pressure. To remove the projecting portions, the snare answers the purpose best. In operating on the ethmoid cells a small burr attached to a dental engine is the best instrument. The operation usually requires several sittings, and care must be taken on account of the thin bone separating the cavity from the orbit and from the brain. The operation is not especially painful and can be done under the application of cocaine.

Ninety-seven cases had been treated. Of this number three were cases of carcinoma, and one was a case of sarcoma. Excluding these, there were 93 cases. Of the simple inflammatory cases, 15 in number, 9 were cured, 8 improved, and 3 disappeared. There were 29 cases of myxomatous degeneration, of which 12 were cured, 10 improved, and 7 were seen but once or twice. There were 22 cases of myxomatous change with polypi; 9 were cured, 10 improved, and 3 disappeared. There were 27 suppurative cases; 8 were cured, 12 improved, and 7 disappeared. In nearly all of these cases radical measures were employed.

SURGERY OF THE MAXILLARY SINUS.

DR. J. H. BRYAN, of Washington, read a paper on this subject.

Of the surgical affections of the antrum, empyema is the most important, and the principal question that has arisen in regard to its treatment has been as to the method of opening the cavity. The washing out of the cavity through the natural opening has been strongly advised. This is applicable to acute, but not to chronic cases, and the results are uncertain. In the majority of cases, an artificial opening is necessary. If there is a carious tooth present, it should be extracted, and frequently in this way the cavity will be opened. If not, it will be necessary to establish connection by a trocar or small trephine propelled by an engine. The opening should be large, and a metallic drainage-tube introduced. If the anterior wall of the antrum shows signs of weakening, it may be opened at this point. If it is desired to enter the cavity from the nose, it may be done through the inferior meatus by a spear-shaped knife, but it is better to use the trocar or drill. After the cavity has been opened, it should be washed out with mild antiseptic solutions.

Where the case is an obstinate one, the opening should be enlarged so that the cavity may be thoroughly explored with a probe, the little finger or the endoscope. This will often show the presence of spots of ulceration, necrosis, supernumary teeth, etc., as the cause of the trouble.

DR. J. N. MACKENZIE, of Baltimore, also called

attention to the various methods of opening the antrum. Washing out through the natural opening is not applicable to many cases, for it is often difficult to find the opening, and this is so even after death. In order to obviate this difficulty, it has been proposed to remove the inferior turbinated bone; but that does not seem justifiable in the majority of cases. It has also been proposed to make an artificial opening below the natural opening. This is rather difficult to carry out, and the hæmorrhage is sometimes great. The operation of entering the antrum through the canine fossa should only be done in cases of growths, or where the antrum wall is so thin that it is an easy matter to pierce it, and where, if the surgeon does not open the antrum, it will discharge itself. By far the best operation for gaining access to the antrum is that through the mouth, by the extraction of a tooth, whether sound or decayed, or by going through the alveolar process without the extraction of a tooth. The speaker considered this method far superior to any other. This opening furnishes drainage from a dependent point; and when injections are made through the opening, most of the fluid escapes through the nose. The objections that have been urged against the operation are that it involves the loss of a tooth (perhaps sound), that food may enter through the tube, and that there is danger of microbes finding entrance from the mouth. These objections are, however, without weight. There is only one contraindication, and that is the presence of an edentulous alveolar process. In these cases the operation had better be done through the nose.

DR. JOHN O. ROE, of Rochester, read a third paper on this subject.

The treatment of these cases is largely surgical, on account of the fact that they are largely out of reach of ordinary medicinal treatment. Most cases of ozæna are in all probability due to discharge from some of the sinuses of the nose. In cases where the discharge does not rapidly subside under treatment, a free opening should be made. If there is no history of long-standing disease, the treatment should be begun with injections through the natural passage. If the case is recent, the discharge persisting after an acute inflammation, this may bring about a healthy condition. When such treatment cannot be employed, an artificial opening should be made. When the teeth are sound, the opening can be made through the zygomatic region or through the meatus. If the disease does not rapidly subside, it is probable that there are conditions of the cavity which must be dealt with radically. Then a free opening should be made and the diseased conditions removed. The opening should be maintained until we are sure that the disease is entirely cured, when the opening can be safely allowed to close.

The following conclusions were presented:

The old idea of considering drainage and cleanliness as the treatment, regardless of the exciting cause, should be abandoned.

In all cases where the purulent discharge does not cease after a reasonable time, the cavity should be freely laid open, so that the exact pathological condition can be determined.

The opening should be maintained for inspection and treatment until the disease has been cured.

The second portion of the session was under the charge of the American Neurological Association.

DR. JAMES J. PUTNAM, of Boston, read a paper on

THE INFLUENCE OF INFECTIOUS PROCESSES ON THE NERVOUS SYSTEM, PATHOLOGY AND ETIOLOGY.

The relation of nervous diseases to infectious processes may be studied from the point of view of the bacteriologist or that of the neurologist; it is the latter which mainly concerns us now. The nervous system may suffer from local bacterial action, from the effects of toxic products, or from the effects of a lower vitality of the nervous system, making it prone to show signs of constitutional weakness or fall a prey to new causes of disease. The term "infection" is here used for convenience (somewhat loosely) to denote the action of specific virus as well as that of specific organisms.

The infectious diseases which would be admitted by every one to cause nervous affections are tetanus, rabies, syphilis, tuberculosis, diphtheria, lepra, gonorrhœa, typhoid, erysipelas, influenza, mumps, the acute exanthemata, the pyogenic organisms, the diplococcus lanceolatus, malaria, actinomycosis. The nervous affections which follow acute infectious diseases are not always due to that primary infection, but to a secondary infection, or they may be only an indirect result.

The diseases of the nervous system which are suspected (but not fully proved) to be of infectious origin are, especially, beri-beri, poliomyelitis, Landry's disease; certain forms of myositis, neuritis and myelitis; some of the cerebral palsies of children; chorea; disseminated sclerosis and other cerebro-spinal and spinal sclerosis; amputation neuritis; herpes zoster.

Finally, we find a number of affections following in the wake of infectious processes, but hardly to be classed as indicating the action of specific virus. Such are the constitutional neuroses and psychoses, the adynamic cerebral affections, the results of œdema or of arterio-sclerosis; various forms of sclerosis of the spinal cord, to which the nervous system is always prone, and which any one of various poisons will help to bring out; subacute forms of multiple neuritis of the ordinary type, such as arise from manifold causes.

A disease may be suspected to be of infectious origin when bacteria are found in the tissues; when the outbreaks occur in epidemics or are related to seasons or locality; when it exhibits vascular and histological changes characteristic of the infection, or specific toxicity of the blood and urine; or it has become much less frequent since the introduction of antiseptics. The discovery of bacteria is by no means conclusive, since they are often only incidentally present. We should suspect a disease of not standing in a very close relation to infection if it was of a kind developing under other influences; and it is therefore important to study what are the morbid conditions which occur most easily as a consequence of various general strains and as a result of heredity. The French school has done much in this direction. The arguments are strong in favor of the infectious origin of the different forms of acute (often hæmorrhagic) myeloneuritis or polymyositis, including beri-beri (the epidemic disease of Northern fishermen), Landry's disease, poliomyelitis. We can at least say that they are due to some poison acting powerfully for short periods and in the manner characteristic of bacterial toxins. Bacteria have been found in Landry's disease, but are not yet accepted as specific. Chorea is probably of infectious origin (Pianese, Dana, Berkley). Bacteria

have been found which may or may not be specific. Myelitis (acute, focal or transverse,) may be produced experimentally by injection of cultures. It also may follow gonorrhoea, and may occur in a manner suggestive of other infectious causes. Amputation neuritis is said to have become less common since the introduction of better methods of asepsis. There is little to be said for the infectious origin of zoster.

Acute multiple neuritis may follow almost any one of the infectious processes, but it is difficult to say just what relation it bears to them. The lesions observed have more of the vascular and interstitial character than is ordinarily met with in neuritis of inorganic origin, but are doubtless often due to the products of metabolism. Sometimes, as in diphtheria of rapidly fatal course, no obvious lesions are produced, but modern research is continually widening our resource in this direction; witness the recent observations of Golgi in rabies, and the investigations of Nischl and others into the pathology of the nerve cell. The meningitis which follows the exanthemata is probably due to secondary infection. It cannot, however, be affirmed that the absence of bacteria indicates the absence of specific local action in diphtheria and other affections; the virus seems to be almost the equivalent of the organism in its power of exciting local reaction. The meningitis which complicates typhoid, pneumonia, and perhaps influenza, is generally due to the primary infection, at least in part. Epidemic cerebro spinal meningitis and sporadic forms are generally due to the diplococcus lanceolatus, the same germ which causes pneumonia; sometimes also to other organisms. Recent research has accentuated the importance of purulent and even simple catarrhal affections of the naso-pharynx and the ear as starting-points for meningeal affections. The specific organisms liable under favorable conditions to cause meningitis are often present in even the healthy pharynx.

Sometimes the infective agent seems to make its way in from the intestinal tract.

If we except the cerebro-spinal membranes, which are a great breeding-place for many bacteria, we may say that the instances of local bacterial action upon the nervous system are few, while, on the other hand, the nervous system is especially prone to suffer from toxic agents circulating in the blood. These poisons are sometimes separable into several definite constituents, which vary as regards their volatility, their solubility in alcohol and their physiological action. Several of them have a strong tendency to attack the vaso-motor system in various ways; and the disturbance of the circulation thus produced is liable to prevent the normal vascular dilatation which is so necessary for the protection of the body against the invasion of pathogenic organisms. These poisons affect the nervous system in various characteristic ways, though it is not improbable that they are capable of acting as universal neurotic poisons. In tetanus (Brunner) the irritability of the spinal cord is heightened as in strychnia poison; in diphtheria, the cardiac centres are sometimes strongly involved, though gross lesions may be absent; in influenza the tendency of the poison is towards the brain more than in the case of some of the analogous diseases. Besides the psychoses which are common, acute hæmorrhagic encephalitis occurs.

As regards chronic poisoning or its results, we find disseminated sclerosis after various acute infectious diseases, and especially after malaria; but it is not

probable that they are due to the action of the specific virus of this antecedent malady.

The causes which contribute to increase the liability of the nervous system to suffer from the effects of infectious disease may be divided into two classes:

- (1) Those which increase the liability to invasion of the body by pathogenic organisms;
- (2) Those which lower the resistance of the nervous system.

Of the latter class are hereditary weaknesses in special directions, the presence of other poisons in the nervous system, the effects of trauma, a poorly acting vaso-motor system.

Debility of the nervous system may contribute to increase the liability of the body to invasion by impairing the vitality of the tissues which should resist the germs of disease, besides impairing the efficiency of the vaso-motor reaction.

The most important lines of research for the future are in the direction of classifying the special liabilities on the part of the nervous system to disease independently of infectious causes, the refinement of our methods of histological research, the more widespread and thorough study of bacteriology and of the means of determining the toxic condition of the blood and urine.

RELATION OF INFECTIOUS PROCESSES TO MENTAL DISEASE,

by CHARLES K. MILLS, M.D., of Philadelphia.

Nearly a century ago, Rush declared that certain causes as gout, dropsy, consumption, pregnancy, and fevers of all kinds produced madness by acting on the brain in common with the whole body; and before the time of Rush and since, this subject has claimed the attention of the medical profession. It is, indeed, only one aspect of the old humoral doctrine, to which we now recur with the important aid furnished by experimental research.

Among the questions to be considered are, Whether the mental disorders of well-known forms of infectious disease are toxæmic, or are due to anæmia, exhaustion or other causes, and whether particular types of insanity are due to the action of special micro-organisms? In endeavoring to answer these and similar questions, we are naturally led to consider inferences and conclusions drawn from, first, clinical and clinico-pathological observations; second, from analogies with affections of the nervous system not psychoses, but which are known or believed to be of microbic origin; and third, from the consideration of the combined clinical, pathological and bacterial observations and investigations.

Under clinical and clinico-pathological observations are included the so-called febrile and post-febrile insanities. Regis and Chevalier-Lavaure, in a report at the Congress of French Alienists in 1893, and Hurd, in a paper published in 1892, have furnished valuable summaries of the literature of infectious processes in their relations to mental disorders, and have considered the subject from various points of view. The former distinguished mental disorders due, first, to infectious diseases; second, to visceral disturbances; and, third, those associated with diathetic maladies.

While not denying the origin of mental manifestations and even special types of insanity from other causes, such as traumatism, anæmia, exhaustion, and emotional shock, these are sometimes due to the action of infectious intoxication and probably to specific micro-organisms, although the last cannot be regarded as

absolutely proved. The question of febrile delirium and febrile and post-febrile insanity has been especially considered by numerous observers. A special type of confusional insanity has been suggested as following infectious and diathetic disorders. Hurd, Korsakoff and Tuke and Woodhead favor the idea that this type of insanity is essentially a toxæmia, and due to a special poison such as is developed in multiple neuritis, influenza and other infectious disorders. Numerous cases have been reported by Chomel, Esquirol, Simon, Hurd, Chaslin, Lloyd and Tull, Frantzel and Strube, and Liebermeister. Much negative evidence in favor of the infectious origin of acute mania or acute delirium has been furnished by clinico-pathological observations. In the case of Lloyd and Tull (one of severe acute delirium or mania), the autopsy revealed nothing positive, unless it was an uncertain incipient meningitis.

Several similar cases have fallen under the author's observation. In one case of acute delirious mania (with hyperæsthesia, active contractions and petechial eruption), the symptoms were highly suggestive of cerebro-spinal meningitis, but the autopsy revealed nothing and the case was apparently one of toxæmia associated with anæmia. Many other such cases might be cited.

An argument in favor of the view that the mental disorders of the infectious diseases are due to toxæmia rather than to anæmia, exhaustion or other causes, is furnished by the well-known fact, that such diseases are sometimes ushered in by violent mental manifestations, or that such manifestations are the chief features of the disease which pursues a course largely afebrile.

In considering the analogies with mental affections, not psychoses or insanities, but which are known or believed to be of microbic origin, it is only necessary to briefly refer to such diseases as multiple neuritis, some forms of myelitis and chorea. The mental disorders of multiple neuritis have now been frequently recorded; as also have chronic insanities with mental manifestations equal in violence to the motor disorder. The teachings of the recent epidemic of influenza are important in this connection. Of great interest are the views of Marie, with reference to the poliomyelitis origin of the lesions of the white medullary fasciculi in pellagra. Pellagra is a disease doubtless of infectious origin, with marked nervous and mental manifestations associated with the lesions of the skin, and in which pathological and microscopical investigations show combined lesions in the lateral and posterior regions of the spinal cord. Comparing lesions of this affection with those of general paralysis, and the forms of sclerosis, it is fair to argue in favor of the possibly infectious origin of all.

As yet, literature has afforded but few combined bacteriological, clinical and pathological investigations. The most valuable contribution thus far is that of Rasori, on the etiology and pathogenesis of acute delirium. Rasori describes in detail a case of acute delirium, with autopsy, and the results of a careful bacteriological examination. The autopsy was conducted with the strictest bacteriological precautions. Two inoculations with subdural fluid led to the development of the same micro-organism, a small bacillus with rounded ends three times as long as its width. Rasori made numerous experiments, and found that the micro-organism grew well in different culture media. He made a series of four inoculation experiments upon rabbits. The experiments demonstrated that the ba-

cillus obtained from the subdural fluid of the patient grew and multiplied in the body of a rabbit, and produced a toxic substance which destroyed the animal, with symptoms of septicæmia, at a period varying from one and a half to six days.

In 1893, in consultation with C. S. Potts, of Philadelphia, the author saw a case of acute delirious mania — also taking part in the autopsy on the case — a report of which has since been made by Dr. Potts. Cultures were made from the cerebro-spinal fluid by Dr. D. Braden Kyle, and demonstrated the presence of the so-called streptococcus lanceolatus, or pneumococcus of Fränkel and Weichselbaum, and also the staphylococcus pyogenes aureus and albus. Microscopical examination of the cortex showed peri-vascular exudation and leucocytes in the lymph sheaths and periganglionic spaces. Dr. Potts, in reporting the case, suggested that as the germs isolated were those usually found in meningitis, the lack of microscopic findings was probably due to the fact that the toxæmia was so violent as to cause the death of the patient before naked-eye appearances had time to develop.

Through the kindness of Dr. N. P. Ball, of Philadelphia, the author was able to present the report of a case of acute delirium, with autopsy and the results of a careful bacteriological examination. The patient was suddenly attacked with delirium, having previously been to all intents and purposes in the best of health. He had marked delusions with hallucinations, and believed that people were coming to attack him. He committed suicide. The autopsy revealed under the dura several fresh patches of exudation; the pia was glassy, and covered with two or three spots of a greenish-white exudate; the ventricles did not contain the usual amount of serum. Three small round cysts filled with a milkish-colored gelatinous fluid were found in the choroid plexus on each side. Cultures were obtained from the ventricle serum and the contents of the cysts. The following is an extract from Dr. Ball's bacteriological report: "In both cases in two days a fine growth occurred along the needle tracts in a gelatine agar tube; a sparse, whitish growth on the surface of the tube not liquefying. The germ obtained was a very small bacterium arranged in twos and threes, resembling micrococci very much, and plainly larger in one diameter than the other."

Dr. James R. Hunt, of Philadelphia, had furnished the author with the notes of another unpublished case. The patient was under the care of Dr. John Ashhurst, Jr., in the surgical wards of the University Hospital. He was a German laborer, twenty-six years of age, who presented a history of obscure renal disease extending over a period of six years. A distinct resistance was felt in the region of the right kidney, which was quite tender on pressure. The urine contained numerous pus cells, but no blood and no crystals. An exploratory operation was performed. The man was irrational immediately after the operation; and this state gradually merged into one of moderate delirium, which on the seventh day actually amounted to mania; this lasting until death, which occurred ten days after the operation. The autopsy was made by Dr. H. W. Cattell. The right kidney lay in a bed of foul-smelling, somewhat greenish pus resembling tubercular sputum. On section, the renal substance was found infiltrated with pus, with great destruction of its upper portion. Examination of the brain and meninges was negative, with the exception of a slight haziness of the

pia and some turbidity of the fluid in the lateral ventricles. Cultures made from the meninges were negative, but from the fluid found in the lateral ventricles a pure culture of the bacillus pyocyaneus was obtained. Cultures from the pus in and about the kidney contained yeast and pus organisms, but not the bacillus or bluish-green pus obtained from the ventricular fluid.

Interesting studies showing the toxic and bactericide action of the blood of the insane have been made by D'Abundo, and have yielded interesting results. The toxæmias of pregnancy and the puerperal state sometimes result in a mental disorder, and are important in the discussion of this subject. A certain number of the cases point strongly to an acute intoxication with the products of bacteria. In one of a series of cases reported by Davis, a condition of marked toxæmia (with restlessness, melancholia and other grave symptoms) was noted, but in which examination of the urine failed to reveal casts, albumin or marked deficiency in the urea. Tuke and Woodhead believe that in puerperal insanity a considerable proportion of the cases are due to toxic influences without reference primarily to childbirth. Olshausen has observed psychoses eleven times following eclampsia in two hundred cases. He suggests classifying these cases as psychoses directly due to febrile puerperal processes, idiopathic psychoses without bodily or febrile disease, intoxication psychoses following eclampsia or, exceptionally, uræmia without eclampsia.

While, so far as the author has been able to learn, no satisfactory bacteriological examination has been made in a case of puerperal mania, Kaltenbach, or rather Gerdes under the direction of Kaltenbach, made an exact and exhaustive bacteriological examination of the organs of a woman who died of puerperal convulsions; and the results obtained in this investigation would have equal significance in the explanation of fatal puerperal mania. Cultures were made from the lungs, kidneys, liver and the aortic blood; and in all cases a growth developed which consisted entirely of a pure culture of a very short, thick bacillus. Its culture showed certain characteristic peculiarities. In a later article Gerdes declared that the eclampsia bacillus is the sole cause of puerperal eclampsia, and is found in no other disease, and that there can be no eclampsia without its presence. The infection proceeds from the uterus, probably from an endometritis existing prior to conception. The bacteria of puerperal infection as summarized by Williams, are, however, the streptococcus pyogenes, the staphylococcus albus and aureus, the gonococcus and the colon bacillus. He holds that it is also quite probable that some of the putrefactive organisms play an important part in what Matthews Duncan has designated as sapræmia.

Conclusions may be drawn as follows:

(1) Specific infection must be included among the causes of the mental symptoms, in diseases which precede, accompany or follow febrile and other infectious disorders.

(2) Much negative evidence can be adduced to show that acute delirium or acute mania is due to toxæmia. Such evidence is afforded by autopsies which reveal neither gross or histological lesions; in these cases the toxæmia probably overwhelms the patient before the production of meningitis or other diseases with recognizable structural lesions.

(3) Analogies with nervous affections which are known or believed to be of microbic origin — such dis-

eases as multiple neuritis, myelitis and chorea — favor the view that insanities with similar or related phenomena and lesions are also microbic in origin.

(4) The evidence afforded by careful bacteriological investigation of cases of acute insanity is thus far meagre and shows that various micro-organisms may induce the same or similar types of mental disease.

(5) The mental disorders of pregnancy and the puerperal state are in a considerable proportion of the cases toxæmic without reference primarily to childbirth; but it cannot be regarded as proved that a bacillus of either eclampsia or puerperal mania is the sole cause of these affections.

THE THERAPEUTICS OF INFECTIOUS PROCESSES OF THE NERVOUS SYSTEM,

by FRANCIS X. DERCUM, M.D., of Philadelphia.

The consideration of the treatment of infectious nervous processes involves not only the treatment after infection, but also its prevention. From much that we know, we have reason to believe that the occurrence of infection is markedly influenced by the nervous system. The ability to resist infection depends largely upon the maintenance of normal nervous tone. We have also learned that the nerve cells undergo certain changes in the course of their functional activity, and these changes can only be interpreted as those of fatigue. The first problem is the prevention of undue waste of nervous substance from undue or excessive fatigue. The necessity for a proper proportion of sleep and exercise, and suitable food, must be borne in mind as an important element in prophylaxis.

Are there any means of special prophylaxis against this or that infectious disease? Here the answer is uncertain. The preventive inoculation of Pasteur, Behring, Tizzoni and Catanni suggest themselves, but at the same time doubts as to the advisability and the applicability of the methods arise.

Again, is there anything that can be done in the various infectious fevers, in general pyæmia, to prevent nervous infection? Where the nervous system is threatened by the existence in other structures of foci of infection, the indications to remove these foci of infection is clear.

In regard to treatment, the general indication is to arrest or limit the infectious process, and to bring about elimination of the morbid products. To meet the first indication is not as yet possible; but the field of chemistry and of the biological laboratory may in the future yield great discoveries.

The attempts to combat infectious microbes by means of the toxins which they produce was then considered; but with the possible exception of tuberculosis and lepra, the symptoms produced by infectious micro-organisms appear to be due, not so much to the germ, as to these very toxins.

With regard to tuberculosis of the nervous system, the use of the lymph of Koch has been shown to be not only useless but dangerous.

In the treatment of leprosy by the use of lymph, the failure appears to have been almost equally marked.

With regard to hydrophobia, the literature was reviewed at length, and the conclusion reached that it was vain to deny the truth of Pasteur's experimental researches on animals, while the evidence as regards human beings in specific instances is strong and convincing.

In reference to tetanus, the condition is still more

interesting. A full review of the literature of the subject was given by the author, who had himself collected reports of 84 cases treated either by the powder of Tizzoni or by the serum. Of these, 20 cases were successful, but in some of these cases other measures such as amputation or early active treatment of the wound were employed. There is no contra-indication to the employment of these antitoxines, as it appears to be in no way injurious.

The other means at our disposal for combating the infectious nervous processes resolve themselves into general remedies, drugs and surgical procedures. Cold has been applied with varying success. It is not improbable that baths of suitable temperature might prove of service in the treatment of infectious nervous diseases. Whether or not by this means the elimination of toxins would be favored, is a matter that at present can only be conjectured.

With regard to drugs, we meet little that is encouraging or gratifying. In leprosy, especially, much has been claimed for gurjon, oil of chaulmoogra. In chorea, which is probably infectious, Dr. H. C. Wood has advanced quinine as of considerable value. Antipyrine also has its advocates.

Surgical procedures enable us occasionally to accomplish definite and often brilliant results. This is especially true with regard to the evacuation of pus in positions formerly considered inaccessible, as in brain abscess.

In conclusion, the author offered a suggestion in regard to the treatment of tetanus which he thought might prove of value. It has been observed that the tetanus bacillus while growing in thymus infusion did not develop spores, and that animals injected with such cultures were highly immune to the cultures of tetanus grown in other media. If thymus-juice possesses such remarkable properties, it should be tested with a view to its possible therapeutic effect. Its administration, in a case of tetanus, beneath the skin, could certainly do no harm, and might do good; and it might also be administered by the mouth. If successful, it would prove far more valuable than the anti-toxine, because so readily procured.

This completed the scientific work of the Congress.

The President DR. ALFRED L. LOOMIS, in adjourning the Congress, congratulated the members on the fact that registration had been larger at this than at any other of the previous meetings. The attendance at the sessions of the various constituent associations had also been larger, and the work of a high degree of merit. There had been a united feeling and action among the different societies in support of the Congress, and the different associations had become more closely united than ever before. He considered the Congress to be one of the most important medical bodies in this country, as it brings together skilled workers in all the departments of medicine and surgery, and brings about unity of thought and action among medical men. If there is one body more than another in this country that is to raise our profession from the position which it has occupied so long, it is such a body as has been assembled here for the last four days.

COST OF THE SMALL-POX EPIDEMIC IN BOSTON.
—The recent epidemic of small-pox cost the City of Boston nearly \$25,000, of which \$19,000 was spent for providing free vaccination.

AMERICAN SURGICAL ASSOCIATION.

ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Concluded from No. 23, p. 587.)

SECOND DAY. — WEDNESDAY.

THE first paper read was that of DR. JOHN S. BILLINGS, of Washington, on

METHODS OF TEACHING SURGERY.¹

This was followed by a paper sent by JOHN CHIENE, M.D., of Edinburgh, on

THE TEACHING OF SURGERY.

In discussing this subject one must begin with a warning. The personal equation relating to himself and the traditional equation relating to his school must be allowed for and discounted. The teaching of surgery resolves itself into two heads:

(1) Systematic consideration of general principles illustrated by clinical examples.

(2) A clinical (bedside) opportunity given to observe, to use, and to educate all the faculties, physical and psychical.

Under either head the teacher must be a learner, the student must be a teacher. The teacher has constantly to warn the student against a blind belief, and at the same time he has to speak most decidedly in giving his opinion. The practice of surgery to be successful must be dogmatic.

It has been objected to systematic lectures, that now that we have books there is no need of a hundred lectures on any subject. Those who hold these views can never have known the stimulus of speech; can never have felt the electrical impulses passing between hearer and speaker.

The method of teaching surgery in Edinburgh was then described.

In conclusion, the writer wished to add a word with reference to the teacher of surgery. He believed in a fallow time, in a time of rest from mental activity. The best rest is change of scene. He suggested the advantages that would accrue from an interchange of chairs in the great English-speaking educational centres. In this way once in seven years a teacher would for a session leave his alma mater and speak to the students of another school. Or the fallow might take another aspect; give a teacher a session off every seven years, and let him do in it what seems to him good.

The discussion of these papers was participated in by Dr. J. Collins Warren, of Boston; Dr. W. W. Keen, of Philadelphia; Dr. Hunter McGuire, of Richmond, Va.; Dr. Chas. B. Nancrede, Ann Arbor, Mich.; Dr. P. S. Conner, Cincinnati, Ohio; Dr. W. S. Forbes, Philadelphia, Penn.; Dr. Robert F. Weir, New York, N. Y.; Dr. T. F. Prewitt, St. Louis, Mo.; Dr. John E. Owens, of Chicago, Ill.

THE SURGERY OF THE KIDNEY,

by L. McLANE TIFFANY, M.D., of Baltimore, Md.

The subject was such a large one that the author considered only those points which offers opportunity for difference of opinion. In the human body bilateral organs are more than sufficient for the carrying on of life; not only may one such organ be removed without impairing existence, but even the remaining organ may be more or less damaged and yet life be carried

¹ See Journal, No. 22, page 535.

on. Any paper on surgery of the kidney at the present day must take into consideration the influence of the disease of the kidney on various operations of general surgery. The influence of anæsthesia on the healthy kidney should be considered. In 150 cases of operation where healthy kidneys were present, albumin was found only in two per cent. of the cases after operation. Every case of railway accident, and some other cases where the patient had been exposed for a certain time, showed albuminous urine on admission to the hospital. In these cases operation has not been deferred on this account. Cases of advanced diabetes have not been operated on. In cases with healthy kidneys the amount of urine passed in the twenty-four hours following operation is diminished in quantity, the specific gravity usually being a little higher.

As to wounds of the kidney, there was no good reason why the kidney should be separated from the rest of the body and require different surgical treatment. A kidney wound should be exposed, sutured, drained, tamponed with gauze, or a piece of it excised in injury beyond repair, or drained, as the case may be, and not the whole kidney sacrificed.

Nephritis and pyelo-nephritis, so-called surgical kidney, is generally met with by the surgeon—a process (organic) resulting from extension upwards of inflammation from the urethra or bladder due to the presence of bacteria. The bacteriology of the trouble in question is yet to be written. In so-called pyelo-nephritis beginning in the kidney, the most frequent cause is stone. The surgeon has especially to deal with the ascending inflammation from the urinary channel below, more often obstructive. The diagnosis is usually not difficult when the disease is advanced. In the early stages the difficulty of diagnosis is great, especially is it difficult to recognize whether the trouble affects one kidney or both. Here it is that the cystoscope offers great opportunity. A moderate amount of urine, with a low specific gravity, and an habitual low temperature independent of the conditions of the pulse are danger signals more important than any others. In the recognition of the kidney affected, we have to rely on pain, pressure and the cystoscope. The treatment before operation consists in exciting the kidneys to secrete by means of infusion of digitalis, acetate of potassium and infusion of buchu. Acid urine and pus suggest pyelo-nephritis very strongly. It is the author's habit not to operate until the patient's kidneys are acting well. After operation, strychnine hypodermically is a useful addition to the previous treatment. The hot-air bath has proven unsatisfactory in chronic cases. In acute cases it is beneficial. Free purgation is of advantage.

Where an operation on the bladder is called for, and there is evidence of disease of one kidney or decided pain in one kidney suggesting disease, that kidney should be operated on at the same time as the bladder. Twice the speaker had done lithotomy for stone in the bladder, the lithotomy being done and the kidney opened at one and the same sitting. All went well. In another stone case, within two weeks, acute suppurative inflammation took place and was followed by death. In a second case there was a similar occurrence.

THE SURGICAL TREATMENT OF SURGICAL KIDNEY,

by ROBERT F. WEIR, M.D., of New York.

Suppurative pyelo-nephritis, suppurative interstitial nephritis and surgical kidney are the ordinary names

given to a disease which originating, as a rule, in the bladder, generally affects both kidneys. In this affection the kidneys are congested and studded with foci of pus. Dr. Delafield states, that so far as he knows all cases die. While this may be the general result, a case reported by the speaker shows that some modification of this prognosis must be made.

H. W., age twenty-five years, was admitted to the surgical wards of the New York Hospital on April 2, 1894. Four years previously he had scarlet fever followed by nephritis. About one year ago he had a mild attack of urethritis. Three months ago he had a severe attack of urethritis which invaded the bladder; gonococci were present in the discharge. This gradually subsided under treatment. Twelve days prior to admission to the hospital he had, without assignable cause, a chill followed by fever. The following day there was pain in the loins, with subsidence of the fever, but the next day the temperature reached 103° F. There was no increase in frequency of urination. The lumbar tendency gradually increased. He was admitted to the medical wards of the New York Hospital March 28th. During the next seven days he had four chills, the temperature ranging between 103° and 105°.

The patient was seen by Dr. Weir April 8d. His condition was a most serious one. The urine contained pus, and was fifty or sixty ounces in amount. There was pain in the right lumbar region, with tenderness on pressure. It was thought that some enlargement of the right kidney could be made out. The impression of the speaker was that there was an abscess of the kidney, or possibly several such of considerable size. He did not think that it was the "surgical kidney," on account of its one-sided character. On April 4th the kidney was exposed in the usual manner. Puncture in two or three places gave no evidence of pus. An incision was made into the kidney, disclosing numerous miliary abscesses, and showing that we had to do with ordinary surgical kidney. It was then decided to extirpate the infected organ. Immediately after the operation the temperature fell from 105° to 99°. The patient made an uninterrupted and rapid recovery, being discharged on April 20th.

It is difficult to say how often the affection is limited to one kidney, but this may not be infrequent. Even where both organs are involved, it may be that something may be done for the relief of tension and the egress of pus by means of free incision made into the kidney substance.

With the happy experience of this case, the reader considered it hereafter justifiable, if the patient's general condition would warrant it, in a case of acute septic invasion of the kidneys, to make on one or both sides an exploratory incision, not only in the hope of relieving the acute interstitial invasion, but also of perhaps encountering a larger and well-defined focus of pus—which pathological condition cannot always be readily discriminated from the more dangerous lesions of the veritable surgical kidney. Should the symptoms point, as in the case narrated, to one kidney only, or should a double exploratory incision show the same result, a nephrectomy may with some hope be resorted to.

SURGERY OF THE URETERS,

by CHRISTIAN FENGER, M.D., of Chicago.

Accidental wounds and subcutaneous ruptures of the

ureter have not as yet been objects of direct surgical procedure upon the ureter at the seat of lesion.

Catheterization of the ureters from the bladder for the purpose of diagnosis has given valuable information. The procedure is reasonably practicable in the female. In man, catheterization is practicable only through epicystotomy.

Catheterization of the ureter from the bladder as a curative measure for the evacuation of hydro- or pyonephrosis, has occasionally been performed. This is more difficult and uncertain than nephrotomy and the attempt to find and remedy the stenosis of the ureter from the pelvis of the kidney.

Dilatation of strictures of the female ureter by elastic bougies has been tried from the bladder with temporary success, and from the pelvis of the kidney successfully.

Permanent catheterization of the ureter from the bladder, a fistula or an implanted ureter is often tolerated only for a limited time, and must be employed with caution.

Uretero-lithotomy is a safe operation by the extra-peritoneal method.

Intra-peritoneal ureterostomy should be done only when access outside of the peritoneal cavity is impossible, and should be completed by careful suturing, covering with omental or peritoneal flap, and drainage.

Opening of the peritoneal cavity to locate the seat of stone may occasionally be necessary; but when the diagnosis is once made, ureterostomy should be done by the extra-peritoneal method.

In valve formation or stricture of ureter causing pyo- or hydro-nephrosis or a permanent renal fistula, nephrotomy should be followed by exploration of the ureter. This is to be done by a long, flexible, silver probe or an elastic bougie. The size of a bougie that will pass a healthy ureter is from No. 9 to No. 10, French scale.

Operation for valve formation should be done through the wound in the pelvis. A stricture in the ureter, if not extensive, can be treated by a plastic operation. Resection of the upper end of the ureter and implantation of the distal end into the pelvis has been performed with success.

Utero-uterine fistulas can be treated satisfactorily by plastic closure of the vagina, or nephrectomy. Implantation of the ureter into the bladder is, under favorable circumstances, the operation of the future for this condition.

Uretero-vaginal fistulas should be treated by vaginal plastic operation for displacement of the distal end of the ureter into the bladder.

Complete transverse wounds in the continuity of the ureter should be treated by uretero-ureterostomy after the method of lateral implantation if possible. Complete transverse wounds of the upper end of the ureter should be treated by implantation of the ureter into the pelvis of the kidney. Complete transverse wound of the ureter near the bladder should be treated by implantation into the bladder.

Loss of substance of the ureter too extensive to permit of uretero-ureterostomy, or too high up to permit of implantation into the bladder, may be treated by implantation on the skin or into the bowel. Implantation into the bowel is objectionable. Implantation on the skin in the lumbar region may have to be followed by secondary nephrectomy, which, however, is much less dangerous than the primary operation.

THIRD DAY. — THURSDAY.

EXECUTIVE SESSION.

The following officers were elected: President, Dr. F. S. Dennis, of New York; Vice-Presidents, Drs. J. R. Weist, of Richmond, Ind., and J. B. Roberts, of Philadelphia. Secretary, Dr. M. H. Richardson, of Boston. Treasurer, Dr. N. P. Dandridge, of Cincinnati, O. Recorder, Dr. DeForest Willard, of Philadelphia. Member of Council, Dr. T. F. Prewitt of St. Louis, Mo.

The next meeting is to be held in New York City.

Dr. Dudley P. Allen, of Cleveland, O., was elected to membership.

The following were elected to honorary membership: Sir Spencer Wells, F.R.C.S., London; Dr. William MacEwen, Glasgow; Dr. M. H. E. W. Schede, Hamburg; Prof. Ernst V. Bergman, Berlin; Prof. Karl Thiersch, Leipzig; Prof. Theodor Kocher, Bern; Prof. Jules E. Péan, Paris.

REGULAR SESSION.

DISCUSSION ON RENAL AND URETERAL SURGERY.

(Postponed from Wednesday.)

DR. M. H. RICHARDSON, of Boston, emphasized the importance of examination of the urine prior to all operations. In regard to the method of performing nephrectomy, he dwelt upon the abdominal method, the incision being made in front laterally. This enabled the operator to control bleeding which was the chief source of danger in the operation. In this method the surgeon was able to determine the presence or absence of the other kidney. He believed that by this method the mortality of nephrectomy would be greatly reduced by so providing for hemorrhage that it could not be an element in the mortality.

DR. H. H. MUDD, of St. Louis, Mo., agreed with Dr. Tiffany that in traumatic lesions of the kidney (even gunshot and stab wound), it is not always necessary to do nephrectomy. He had seen such cases recover. He had also met with a number of cases of extensive laceration of the kidney from contusion, in which there was no external evidence of such injury. Many of these cases recovered without operation. When operation was needed, he believed that partial nephrectomy was justifiable. If necessary, a secondary operation could be done as a primary operation; the removal of kidneys so injured was apt to be disastrous.

In pyelo-nephritis and renal lithotomy the first operation should be tentative, consisting of incision and evacuation, the kidney being allowed to remain; a secondary operation being performed if necessary.

He did not favor the abdominal incision for the removal of the kidney, on account of the risk of infecting the abdominal cavity in suppurative conditions of the kidney, and because the lumbar incision was usually sufficient, and if necessary it could be extended and the abdomen opened.

DR. T. F. PREWITT, of St. Louis, called attention to several cases of renal stone, laceration, etc., coming under his observation. One of these cases was that of a man who had passed scales of stone by the urethra, and in whom operation showed a stone in the pelvis of the kidney, with several small detached particles. He was unable to offer an explanation of this separation. With regard to diagnosis, he held that a large amount

of pus with a small amount of mucus in the urine indicated that the trouble was in the kidney rather than in the bladder.

DR. W. S. FORBES, of Philadelphia, called attention to the tolerance of the kidney to the presence of stone. He related a case where autopsy revealed the presence of a stone in the pelvis of the kidney, and in which during life there were no indications of stone. The character of the stone was peculiar, in that it was what is known as indigo stone.

DR. CHAS. B. NANCREDÉ, of Ann Arbor, Mich., had used the abdominal method of nephrectomy in four cases, but he did not favor it in suppurative conditions of the kidney. In order to avoid hæmorrhage he had used an elastic ligature, gradually slipping it down and removing the kidney piecemeal until the pedicle was reached. In the treatment of suppression of urine that may follow these operations he recommended the use of nitro-glycerine, which he had used with advantage.

DR. JOHN B. DEEVER, of Philadelphia, added his testimony in favor of the anterior incision in nephrectomy. He felt certain that with proper precautions the danger of infection of the peritoneal cavity could be avoided.

DR. STEPHEN H. WEEKS, of Portland, Me., reported the case of a man who developed an abscess in the groin after having had symptoms of renal colic some months before. On opening this abscess, pus was discharged, and subsequently a small calculus was passed. No urine was discharged through the abscess at any time. The sinus has since almost healed.

DR. WILLIAM H. CARMALT, of New Haven, Conn., reported the case of a woman on whom it was thought that nephrectomy might be required. On preliminary examination through an abdominal incision, only one kidney could be discovered. The patient died three years later, and autopsy showed that the second kidney was located in the pelvis.

THE TREATMENT OF INOPERABLE MALIGNANT TUMORS BY THE TOXINES OF ERYSIPELAS AND PRODIGIOSUS,

by DR. WILLIAM B. COLEY, of New York.

Dr. Coley began the treatment of inoperable sarcoma by repeated injections of living cultures of erysipelas streptococci, in May, 1891, and continued this method of treatment in ten cases: (six sarcoma and four carcinoma) a report of which was published in the *American Journal of Medical Sciences*, May, 1893.

In but four of these ten cases was he able to produce erysipelas; yet the marked improvement which in several cases followed the repeated injections where no erysipelas was produced, led him to believe that the greater portion, if not all, of the curative action of the erysipelas, was due to the toxic products rather than to the germ itself.

The first experiments with the toxines were made in 1892, with bouillon cultures prepared by heating to 100° C. The effect on the tumors was slightly less than when living cultures were used.

Early in 1893, he began to use bouillon cultures filtered through porcelain, without having been subjected to heat. The toxines of bacillus prodigiosus, prepared in the same way, were used in conjunction with the toxines of erysipelas. This was done with the idea of intensifying the action of the erysipelas upon sarcoma, it having been proven by bacteriologists that the virulence of the erysipelas germ could be

increased by combining it with the bacillus prodigiosus.

The action of the combined toxines has been proven, to the writer's satisfaction, very much more effective than that of the erysipelas toxines alone, and to this combination he attributes the successful results.

The toxines, to be of value, must come from very virulent cultures, and must be freshly prepared. All of the successful cases were treated by toxines derived from cultures from a fatal case of erysipelas.

Twenty-five cases of sarcoma, eight cases of carcinoma, and two cases of sarcoma or carcinoma, were treated with the combined toxines. Including one case treated by the injections of fluid living cultures, there were five cases in which it was reasonable to hope for permanent cure.

The first, sarcoma of the neck and tonsil, twice recurrent. Has gone nearly three years without treatment.

A second, sarcoma of the back and groin, is perfectly well and free from recurrence fourteen months after cessation of treatment.

A third, sarcoma of the abdomen and pelvis, is in perfect health one year after leaving the hospital, and the very small portion of the tumor which had not been wholly absorbed has remained dormant.

A fourth, sarcoma of the abdominal wall, which had entirely disappeared under two and a half months' treatment with the toxines, is perfectly well and without recurrence three months after treatment was discontinued.

A fifth, sarcoma of iliac fossa, is well one year since beginning of treatment, with the tumor one-third the original size, and the element of malignancy apparently destroyed.

A sixth, recurrent sarcoma of leg and thigh, is still under treatment. The sarcoma of the stump, the size of a hen's egg, has entirely disappeared.

Of the remaining nineteen cases of sarcoma treated, nine others showed marked improvement, while in eight the improvement was very slight, and in two no improvement was noted.

Of the eight cases of carcinoma, all but one showed more or less improvement, and in three cases it was very marked.

All of the cases treated were inoperable and hopeless. In all, the diagnosis was not only established by eminent surgeons, but confirmed by expert pathologists.

No rational explanation of the action of the toxines upon malignant tumors could be offered, except on the assumption that such tumors were of micro-parasitic origin. Admitting this theory, evidence in favor of which is steadily increasing, explanation would be easy, namely, antagonistic bacterial action.

The conclusions drawn from the cases treated, were as follows:

(1) The curative action of erysipelas upon malignant tumors is an established fact.

(2) This action is much more powerful on sarcoma than carcinoma.

(3) This action is chiefly due to the soluble toxines of the erysipelas streptococcus, which toxines may be isolated and used with safety and accuracy.

(4) This action is greatly increased by the addition of the toxines of bacillus prodigiosus.

(5) The toxines, to be of value, must come from very virulent cultures and must be freshly prepared.

(6) The results obtained from the use of the toxines, without danger, are so nearly, if not quite, equal to those obtained from an attack of erysipelas, that inoculation should rarely be resorted to.

VENOUS TUMOR OF THE DIPLOË,

by DR. LEWIS S. PILCHER, of Brooklyn.

The case reported differed from others which had been described, in that the tumor did not communicate with the longitudinal sinus, but was essentially a large venous cavity into which numerous diploic veins opened. The patient was a girl, aged fifteen years. When five years of age she fell and struck the top of her head. Within a few days a small, soft swelling was noticed at the site of injury, without pain or tenderness. This gradually increased in size. At the end of five years, it was lanced and a small quantity of clotted blood extruded. It immediately refilled. It was repeatedly opened, with the same result. She came under the observation of the author in 1894. At this time there was a prominent tumor over the site of the anterior fontanelle, about two-and-one-half inches in its largest diameter. Over the convexity of the tumor the skin was thin and without hair. In the right anterior quadrant of the base an elevated plate of bone could be felt. The tumor was soft, and could be diminished very slightly in size. It was gradually enlarging. On March 14th the author operated for the relief of this condition. The tumor was opened. In the anterior part of the base the cranial bone was wanting and over a space of two-and-one-half by one-and-one-half centimetres the dura mater was exposed. Certain venous channels of the diploë were seen to be opened, and from these free bleeding took place. The overhanging bone edge was cut away with bone forceps, the base of the cavity was well curetted, the cavity packed with iodoform gauze, and as far as possible the wound was sutured. No complication disturbed the after-course of the case.

STRANGULATION OF MECKEL'S DIVERTICULUM CAUSED BY VOLVULUS OF THE ILEUM.¹

J. W. ELLIOT, M.D., of Boston, read a paper on the above subject.

FOURTH DAY. — FRIDAY.

MOOTED POINTS AS TO FRACTURES OF THE ARM, WITH NOTICE OF AN IMPROVED SPLINT,

by J. MCFADDEN GASTON, M.D., of Atlanta, Ga.

The purpose of the paper was to ask attention to practical considerations touching the treatment of fractures near the articulations of the arm. In cases of fracture complicated with dislocation, the author saw no advantage in first setting the fracture, but preferred to reduce the dislocation before treating the fracture, and efficient means should be taken to prevent the recurrence of the dislocation.

With regard to fractures at the wrist, the only one in which there is any notable diversity of opinion is Colles' fracture, which occurs from half an inch to one inch from the carpal articulating surface. In most cases the adjustment can be effected by extension upon the hand and pressure over the projecting lower fragment, but there is usually difficulty in maintaining apposition. The apparatus for Colles' fracture should control any movement of the wrist or of the fingers. This is effectually accomplished by the splint originally

adopted by Nelaton. The dorsal and palmar Nelaton splints keep the fragments in their proper position, and with the extension effected by the pistol-handle-shaped splint, all the requirements are met. The injunction to leave the fingers exposed, that movements of these and of the carpal bones may accompany the treatment, is more likely to increase the local inflammation than the rule to maintain complete rest. Early movement of the fingers and of the carpal joint must increase the tendency to subsequent stiffness. After considerable experience with the double pistol-handle-shaped splint in the treatment of Colles' fracture, the author had never seen a case in which there has remained any permanent impairment of the use of the fingers or the wrist-joint, nor had any material deformity followed the treatment.

Dislocation of the head of the radius or the upper part of the ulna is frequently observed in connection with fractures of the lower extremity of the humerus. These require correction before the fracture is treated. In considering whether the arm should be dressed in the extended or flexed position, we should investigate thoroughly the bearings of the different modes of treatment when there is likely to be such inflammatory involvement as so induce ankylosis. A stiff arm in the extended position is practically useless, while in a flexed position it is of much service. While it is held that with proper precautions ankylosis should not occur, yet there are cases with such complications that ankylosis will ensue in spite of the best treatment. Where the surgeon cannot reasonably expect to avoid ankylosis, there is no question as to the necessity of treating the arm in an angular position. The practicability of maintaining the fragments in position where the fracture involves the articulation, is favored by the relaxed rather than by the extended position. The rather fanciful claim in favor of the extended position being favorable to the preservation of the outward angularity of the forearm upon the arm is not entitled to any special consideration, as there is nothing in the flexed position to interfere with the relation of the radius and ulna to the humerus. The comfort and convenience of dressing the arm in the flexed position also commend themselves. The author considered the use of a straight splint applicable only in fractures of the olecranon.

In the treatment of fractures near the elbow, the author applies a roller bandage from the fingers to above the seat of injury, and with the arm in a flexed position pasteboard splints are moulded to its inner and outer surfaces. These splints extend from the wrist to the shoulder. An internal angular splint is applied to the outside of the dressing until the pasteboard has become thoroughly dry. This dressing has all the advantages of plaster-of-Paris and can be removed daily if it is so desired. The results of this method have been entirely satisfactory.

Fractures near the head of the humerus may be intercapsular or may only implicate the tubercle outside of the capsule. The most frequent seat is through the surgical neck. It is for this class of cases that a special splint has been devised by the author, the object being to effect extension and counter-extension and keep the fragments in place and at rest. The splint is formed with a right angle in the plane of the board at the elbow, the upper branch extending into the axilla with a crutch-like termination, and the lower branch reaching the wrist. When fitted to the inner face of the

¹ See page 286 of the Journal.

arm and secured with a bandage, with a light board splint moulded to the outer aspect of the arm, all the conditions are met for retaining the fragments accurately in apposition. The arm is to be kept close to the body. The crutch-shaped branch is the special feature of this splint. Several cases were reported in which the splint had been used with success.

THE REMOVAL OF STONE IN THE BLADDER, WITH THE PRESENTATION OF A NEW LITHOTRITE,
by DR. W. S. FORBES, of Philadelphia.

The points considered were :

- (1) The measured crushing resistance of vesical calculi.
- (2) The lithotrite from a mechanical point of view.
- (3) The measured strength of the lithotrite.
- (4) A new lithotrite.

A table was given of the size, displacement, specific gravity and measured crushing resistance in pounds and ounces of 183 human vesical calculi. The strongest calculus in this group took, on the testing machine, four hundred and six pounds to crack it. Several took upward of three hundred pounds to crack them. In testing the strength of the lithotrites on the testing machine, the strongest lithotrite (No. 83 F., made by Tiemann & Co.) had the female blade bent at six hundred and fifty pounds. A Thompson lithotrite (No. 29 F., made by Weiss, London), bent badly at three hundred and thirty-three pounds, on the same testing machine. The practical bearing of these observations is, that the strength of the lithotrite may be tested and stamped on it, before it leaves the instrument maker's shop, thus enabling the surgeon to begin his operation knowing the strength of the lithotrite.

The testing apparatus for determining the force required to crush the stone and the strength of the lithotrite was exhibited and demonstrated. The apparatus was the invention of Mr. John S. Forbes, son of the author. Mr. Forbes has also devised a new lithotrite designed to furnish a stronger instrument and obviate some of the defects of former instruments.

EXTIRPATION OF THE LARYNX,

by WM. H. CARMALT, M.D., of New Haven, Conn.

In this case the operation was done in such a way as to permanently close the opening into the mouth, so that there should be no communication with the lungs. He was induced to do this by his knowledge of a case in which the larynx was extirpated and the opening to the mouth subsequently closed. The operation was done two and a half years ago by Dr. J. Solis Cohen, of Philadelphia, and the man gained the power of speaking loud enough to be heard in a large room. This was preceded by swallowing or drawing air into the pharynx.

Dr. Carmalt's case was that of a man forty-four years old. The patient came under observation with severe attacks of dyspnoea due to the presence of an ulcerated nodule in the larynx, which had been first discovered two years ago. The dyspnoea necessitated the performance of tracheotomy. The larynx was extirpated March, 1894. The upper portion of the oesophagus was stitched to the epiglottis. On the second day he was able to swallow fluids, and made an uneventful recovery. The patient is now able to speak in a whispered voice.

DR. JARVIS S. WIGHT, of Brooklyn, exhibited a number of instruments, including needle forceps, self-

threading needle, aneurism needle forceps, and a new form of knife provided with a beak substituting the use of a grooved director.

The following papers were read by title: "The Effect of Erysipelatous Attacks on Tuberculosis," by Dr. DeForest Willard, of Philadelphia; "Hernia," by Dr. W. T. Bull, of New York; "Cases of Extra-Uterine Pregnancy, with Remarks," by Dr. M. H. Richardson, of Boston; "Treatment of Urethral Vegetations by a Circular-cutting Curette," by Dr. John B. Deaver, of Philadelphia; "Report of Surgical Cases," by Dr. Chas. B. Porter, of Boston.

STATE MEDICAL SOCIETY OF PENNSYLVANIA.

THE Forty-fourth Annual Meeting of this Society convened in Philadelphia, May 15th to 17th inclusive, the sessions being held in a vacant church building at Twelfth and Walnut Streets. Dr. H. G. McCormick, of Williamsport, was President. There were 520 names of delegates and members enrolled upon the register, making it the largest meeting in the history of the organization. It may also be said that the programme, under the efficient management of the Committee on Arrangements, Dr. E. E. Montgomery, Chairman, was the best ever presented to the Society. Unfortunately, so many papers had been prepared that more than half had to be read by title only, and there was but scanty time to discuss others, even on most important topics. As the rule, the contributions were on practical clinical subjects and in quality were excellent; in consequence, the forthcoming volume of transactions will be of more than usual value.

Addresses of Welcome were delivered by Hon. Edwin S. Stuart, Mayor of Philadelphia, and by Dr. E. E. Montgomery.

The Secretary of the Society reported a total membership of 2,500, with an increase greater than the average during the past year. The Treasurer, Dr. Geo. B. Dunmire, reported a balance on hand of nearly two thousand dollars, all expenses for the year having been met.

Dr. H. G. McCormick, Chairman of the Legislative Committee, reported the enactment of a law establishing a State Medical Council and three State Boards of Examiners and Licensers. The first examination of physicians for authorization to practice in Pennsylvania, will be held in Philadelphia and Pittsburgh on June 11, 1894. In order to aid the State Board in its work, the following resolutions, prepared by a committee, were submitted and adopted :

Resolved, That the Secretary of each county society is requested to forward at once to the Secretary of the State Board of Medical Examiners a correct list of registration of doctors under the last Act, on and from the 1st day of March last, and quarterly thereafter; and in communities where there are no county societies, the President of this Society shall appoint a member of this Society living in such county to procure such list, and in any case of neglect by either the officers aforesaid or the appointee to send such a list, the Secretary of the State Board of Medical Examiners of this Society shall be empowered to procure the same; and further be it

Resolved, That we recommend that \$500 of the moneys of the Society, or so much thereof as may be necessary, be appropriated for the examination of the registration of physicians in this State, with the view of enforcing the

Medical Examiners' Act lately passed, said money to be expended only under the direction of the State Board of Medical Examiners representing this Society, and that they shall approve all bills before being paid. Further, that the said Board of Examiners report at the annual meeting of this Society their action and expenditures under this resolution.

A resolution was also unanimously passed calling upon the Medical Council and State Boards in all their publications to refrain from applying any sectarian designations to members of this Society or candidates from regular colleges applying for examination. The Luzerne County Medical Society also entered a formal protest at this meeting against the use of the word "alopath" in the public prints, to designate non-sectarian physicians.

The Trustees of the *Journal of the American Medical Association* were criticised severely for permitting quack advertisements and other unethical matter to appear in the *Journal*. With regard to the proposal to alter the Code of Ethics (which will come up at the San Francisco meeting) this Society unanimously voted to instruct its delegates to oppose any alteration in the National Code.

The subject of "The Care and Treatment of the Insane and the Organization and Construction of Hospitals for the Insane" was brought up by Dr. Hiram Corson, and was referred to the Committee on Legislation. At its last session, a committee had been appointed to memorialize the Legislature on this subject, and the Senate had passed the bill proposed by this committee, but it had been lost in the House of Representatives. This committee reported as above stated, and was discharged.

Dr. J. A. Lippincott, of Pittsburgh, Chairman of Committee on Contagious Ophthalmia, reported that circulars had been sent to prominent ophthalmic surgeons throughout the State soliciting co-operation. The committee urged the careful inspection of immigrants at ports of entry, for *trachoma*, and proper treatment of all such cases. The great danger lies in the general ignorance of the gravity of the disease. Dr. George M. Gould offered resolutions with regard to the legal restriction of ophthalmia neonatorum, which was adopted.

Resolutions were also adopted deprecating the crippling of the army medical service by the proposed reduction of appropriations, which would not only greatly impair its efficiency, but would seriously imperil the very existence of the Army Medical School in Washington.

On the third day of the session considerable time was devoted to a discussion on Tuberculosis, which was the principal medical feature of the session. It was really opened by the Address in Hygiene, delivered by Dr. J. H. Wilson of Beaver, in which special attention was directed to the means recently proposed for restricting the communication of the disease by means of disinfection and isolation under the control of State and County Boards of Health.

Papers were read by A. M. Cooper on "Psychical Phases of Tubercular Folk"; by Lawrence M. Flick on "Prophylaxis"; by Thomas J. Mays on "Strychnine Treatment"; by Daniel Longaker on "Tubercular Meningitis"; by S. S. Cohen on the "Curability and Treatment of Pulmonary Tuberculosis." Dr. Wm. P. Munn, a delegate from Denver, read a valuable paper on "Colorado Climate" extolling its

comparative dryness, amount of sunshine, and freedom from infection. In the general discussion, Drs. J. S. Cohen, J. C. Wilson, J. M. Andrus and others participated. No less than six papers upon allied topics had to be read by title on account of the expiration of the time.

The paper that attracted most attention at this meeting (and the only one published *in extenso* in the newspapers), was read by Dr. Hildegard H. Longsdorf, of Carlisle; it was on "Christian Science in its Relation to the Medical Profession," and accounted for the existence of this mirage of modern medicine as a psychical manifestation, growing out of the love of mystery and the revolt from materialistic character of modern science. It is a "fad" especially liable to spread among a hyperæsthetic and ignorant leisure class, whose ills are largely neurasthenic, or entirely imaginary. On motion, a thousand copies of the address were directed to be printed for distribution to the laity, under authority of this Society.

A very interesting lecture on "Leprosy and the Loper Settlement in the Sandwich Islands" was delivered, by invitation, by Prof. Benjamin Sharp, M.D., of the Academy of Natural Sciences of Philadelphia. It was illustrated by photographs and lantern slides thrown upon the screen, which Dr. Sharp had made while on a visit last year to Hawaii. It forms a valuable contribution to the subject.

The Address in Surgery was delivered by Dr. G. D. Nutt, of Williamsport; that in Medicine, by Dr. W. F. Foster, of Pittsburgh; in Mental Diseases, by Dr. T. M. T. McKennan, of Pittsburgh; in Obstetrics, by Dr. E. E. Montgomery, of Philadelphia; and on Ophthalmology, by Dr. Geo. E. De Schweinitz, of Philadelphia.

The President's Address, by Dr. McCormick, was delivered in the evening, and was followed by a reception by the Faculty of the Jefferson Medical College at the Academy of the Fine Arts. Other entertainments were given by the Medico-Chirurgical College, the University of Pennsylvania, the Medical Club, and by the Philadelphia County Medical Society, the latter being a Theatre Party followed by a reception.

The following officers were elected for the year: President, Dr. John B. Roberts, of Philadelphia; First Vice-President, Dr. S. C. Stewart, of Clearfield; Second Vice-President, Dr. J. A. Lippincott, of Pittsburgh; Third Vice-President, Dr. J. H. Wilson, of Beaver; Fourth Vice-President, Dr. R. Armstrong, of Clinton; Secretary, Dr. Wm. B. Atkinson, of Philadelphia; Treasurer, Dr. Geo. B. Dunmire, of Philadelphia.

Next place of meeting, Chambersburg, Dr. George S. Hall, Secretary of Committee on Arrangements.

TUBERCULOSIS IN DOMESTIC PETS.—Professor Fröhner, of the Berlin Veterinary School, has recently made some investigations as to the prevalence of tuberculosis among small domestic animals, the results of which are as important as they are interesting. He finds it rare among dogs, somewhat more frequent among cats, and quite common in parrots. As the latter usually live in rooms constantly used by members of the family, their liability to tuberculosis makes them rather dangerous pets.

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THE TWENTY-SECOND ANNUAL REPORT OF
THE BOSTON BOARD OF HEALTH.

THE annual report of the Boston Board of Health for the year ending January 31, 1894, contains, in addition to the usual valuable tables and charts, some interesting statements and some important recommendations. The death-rate per 1,000 inhabitants for the year was 24.02. Influenza is still held responsible in a great measure for the large increase in respiratory diseases. The prevalence of pneumonia during the year is reported as having assumed a character unequalled in the registration of vital statistics in this city.

In 1851, its percentage to the total mortality was 7.75; in 1893 it was 13.15 per cent., or a total of 1,540 deaths from this cause alone. On the other hand, the percentage of the total mortality from zymotic causes is less by .49 per cent. than for the year 1892, or 17.43 per cent. of the total number of deaths. The deaths from diphtheria increased 62, while the deaths from scarlatina decreased 14, as compared with the preceding year.

The Board finds that it is with the diseases over which control cannot be exercised that death claims the largest number of victims. The diseases of a constitutional character numbered 2,469, or 21.08 per cent. of the total mortality, and those of a local character, as pneumonia, bronchitis and heart disease, and the like, amounted to 5,712 deaths, or 48.77 per cent. of the whole number of deaths. There were also 572 deaths due to violent causes.

The number of children who died under five years of age was 3,987, or .80 per cent. higher than in 1892, but 1.15 per cent. less than the average for the previous ten years.

There was no epidemic during the year.

Some interesting items are given concerning the cases of small-pox which have occurred during the winter, exhibiting in a striking manner the value of vaccination. From October 30, 1893, to January 31,

1894, there were in all 36 cases. The percentage of deaths among the unvaccinated was 29.62. No vaccinated person died, and no vaccinated person was seriously ill. A mother nursed her infant, who had the disease, during the whole course of the attack, but the mother had two perfectly characteristic scars and did not contract the disease. Two vaccinated children, relatives of a patient, were constantly exposed from three to four weeks to the disease, and did not become ill. Of the 19 cases occurring in Ward 19, which were traced to an unrecognized attack of the disease, only one vaccinated person contracted it; and this patient, who had been vaccinated forty-five years ago, had such an extremely mild attack that, if it had not been for the existence of the other cases, the disease would probably not have been recognized.

The city of Boston made an extra appropriation of \$25,000 for free vaccination, and, in round numbers, about 100,000 persons were vaccinated under direction of the Board of Health. If one compares the condition of Boston to-day with that of Chicago in regard to small-pox, any candid person must recognize that the energetic action of the Board and the sum of money have been well spent, to the great advantage of this city and its inhabitants.

Under the head of "Contagious Diseases," the report draws a sharp and instructive contrast between what the Board has been enabled to do during the last twenty years in restraining and suppressing small-pox, and its enforced comparative helplessness in its relation to such diseases as diphtheria, scarlet fever and typhoid fever. During that period small-pox has diminished to almost nothing, whilst the other diseases have continued practically endemic, as during the preceding period of twenty years. During the last twenty years there have been only 34 deaths from small-pox, and during the same time there have been 8,245 deaths from diphtheria, 3,281 deaths from scarlet fever, and 3,376 deaths from typhoid fever. Against these diseases there is, as yet, no prophylactic treatment such as we possess in vaccination against small-pox. Early recognition and report of cases, isolation until all power to impart the disease is lost, and timely disinfection, are the means by which these diseases may be controlled. The proper application of these means involves expense.

The Board of Health has repeatedly asked for an appropriation with which to increase its care for the uncontrolled cases of diphtheria and scarlet fever, and it has as often been refused. "The Board would like to have all cases seen by its own physicians or agents, held under proper surveillance while at home, and released from isolation only on the certificates from the same physicians or agents. It would like to aid in having all doubtful cases of sore throat decided by expert bacteriological examinations, and have all cases of diphtheria discharged from isolation by means of the same tests, or after a prolonged isolation when all local and general symptoms of the disease have disappeared. To do this the department must have more

dical agents, and have its present medical officers relieved from duties now performed for other departments of the city."

In regard to diphtheria, the Physician of the Board, J. H. McCollom, emphasizes his conviction, as the result of careful personal study of the subject, that the manifest importance of a bacteriological investigation as a means of diagnosis in doubtful cases of diphtheria becoming more and more evident, and of no less importance, as far as the well-being of the community concerned, is the bacteriological investigation of cases after apparent recovery from diphtheria.

In an endeavor to diminish the prevalence of this disease, the two most important factors, in Dr. McCollom's judgment, are: first, the recognition of mild and doubtful cases; second, the actual disappearance of the special germs of the disease, which can only be recognized by means of a bacteriological investigation. In New York this conviction has reached the stage of practical application.

An appropriation of money for protection against the spread of infectious diseases does not furnish places for "workers" or work for voters; but there is absolutely no object through which an intelligent and faithful application of a sum of money, and that of moderate amount, can be made to yield such valuable returns to a community like that of Boston. Few will be found to deny this, and yet such an appropriation is not to be had. The city might even better be without a park or two, or at least without some of the very costly elaborations of a Park System!

SUNSHINE AND MICROBES.

PROF. PERCY FRANKLAND has written an article in the May number of the *Nineteenth Century*, on "Sunshine and Microbes," which is interesting as a summary of what has been discovered on the influence of the sun's rays on bacteria. The first and most important step in revealing the cleansing and disinfecting properties of sunshine was made sixteen years ago by two Englishmen, Downes and Blunt. They established the remarkable fact that if certain liquids capable of undergoing putrefaction were exposed to the direct rays of the sun, they remained perfectly sweet, whilst exactly similar liquids kept in the dark became tainted and exhibited innumerable bacteria under the microscope.

They also ascertained that the oxygen of the air is a powerful adjuvant to the bactericidal power of the sun's rays. Recently, M. Moment in Pasteur's Institute, has obtained more exact information confirming these experiments by exposing anthrax-bacilli to sunshine in the presence of and in the absence of air, with the result that while the anthrax-bacilli exposed to the sun and air were killed in two and a half hours, similar bacilli placed in a vacuum were still alive after fifty hours' exposure to sunshine.

The next problem to be attacked was to ascertain whether all the solar rays were equally responsible for

this important result, or whether the different colored rays composing the sun's beams produced different effects, as is known to be the case in those important vital processes which go on in green plants.

Geisler, of St. Petersburg, has given especial attention to this question. He decomposed the white sunbeams by means of the prism and then exposed typhoid bacilli to the light of the various parts of the spectrum. The rays of the red end he found had little or no effect at all on the growth of the bacilli, whilst the most powerfully deleterious action was obtained in the ultra-violet, the effect becoming less and less marked in passing from this to the red. The rays which exert this destructive or inhibitory effect on bacterial life are precisely those which also exert the most powerful action on the ordinary photographic plate.

Of much interest also is the comparison made by Dr. Geisler of the potency of the sun and the electric lights respectively in destroying bacterial life. His experiments have proved the striking inferiority in this respect of the most dazzling of artificial lights in comparison with sunshine.

Even if exposure to the solar rays is not sufficient to actually destroy the bacteria, it may yet profoundly modify their character, and bring about the most important changes in their subsequent behavior. Thus, while many bacteria can produce the most wonderful colors — yellow, orange, scarlet, crimson, indigo-blue, etc., it has been found that exposure to sunshine for a short time is able to rob them of this beautiful property.

Much hygienic importance and interest attaches to some recent investigations of Dr. Palermo, of Naples. The microbe selected for experiment was Koch's cholera bacillus. These bacilli are fatal to guinea-pigs in about eighteen hours. Dr. Palermo placed some of these bacilli in the sunshine for various periods of time, and found that whilst, when he protected them from the sun, they killed guinea-pigs in eighteen hours as usual, after they had been "sunned" for from three-and-a-half to four-and-a-half hours, they were perfectly harmless, and the animals experienced no evil results whatever from inoculation with them.

The cholera bacilli which refused to kill the guinea-pigs had not been destroyed, nor had their total number suffered any diminution, but their inability to work mischief was directly due to the removal *during this exposure to sunshine of their virulence or disease-producing powers*. More than this, it was found that those guinea-pigs which had survived the inoculation with these sunshine-exposed bacteria had acquired immunity toward the disease. Thus, when eight days later they were inoculated with *virulent* cholera bacilli, they were unaffected by doses which to ordinary guinea-pigs proved rapidly fatal.

Dr. Frankland has experimented to ascertain the action of sunshine on the spores of anthrax suspended in water, and has found that in this medium they are able to survive as much as one hundred hours or more

of full sunshine, whilst in ordinary culture materials, like broth and jelly, they are generally killed by a few hours exposure to the sun's rays. He has also found that the addition of common salt greatly increases the destructive action of sunshine on anthrax spores.

In order to ascertain the effect of daylight on the bacteria of a running stream, two young German bacteriologists lately carried on an interesting experiment on the river Isar near Munich. They sat a whole night by the river bank, from six in the evening till six on the following morning, determining the number of microbes in the water at various intervals of time. The experiments were made towards the end of September, and they commenced their watch about sunset at a quarter past six in the evening. At this time, one hundred and sixty bacteria were found in twenty drops of water; but at three and four o'clock in the morning, when the water had therefore been for several hours in darkness, there were more than twice and even three times that number of germs present, indicating that in the absence of their deadly foe, the sunshine, they had multiplied with great freedom — only, however, as was found when morning approached and day wore on, to be kept once more in subjection and reduced in number.

These experiments were, of course, made with water taken from the superficial layers only, but it is obviously of particular interest to ascertain whether this destruction of bacteria can take place also beneath the surface of the water, and if so, to what depth the sun's rays can exercise this inhibitive power.

MEDICAL NOTES.

A NEW MORGUE FOR PHILADELPHIA. — The Department of Public Safety of Philadelphia has completed the new city morgue on Wood Street, Philadelphia, and the building was open to physicians' inspection on June 1st.

A ROYAL METHOD OF PAYING THE DOCTOR. — A correspondent of the *Medical Record* sends the following anecdote, which the late Prof. Edward Jäger, of Vienna, related of his father (at that time the first oculist in Europe), and of Milosh Obrenovich, who then was the first Prince of Servia: "Milosh had cataract of both eyes. Jäger operated for him on one eye with good result. Milosh paid for this operation 6,000 ducats (nearly \$10,000). When Jäger had operated on the second eye, and the result was happy again, Milosh sent him this time 8,000 ducats. Later they met at the table of Prince Metternich, and were seated one next to the other. Jäger asked his neighbor why he had only given him 8,000 ducats for the second operation. Milosh, with the cunning smile of a savage or a peasant, answered: 'If I had had a third eye to be operated on, I would no doubt have paid you again 6,000 ducats for the second operation.' May not his sublime Highness, the Shah of Persia, feel inclined to play a similar trick on Dr. Galezowsky?"

"WHAT SHOULD A DOCTOR BE PAID?" — This is the subject discussed by Dr. W. A. Hammond in the June number of the *North American Review*. Our readers will be glad to learn that, under certain circumstances, \$500,000 would be a moderate fee. The *Lancet* (June 2d) publishes an address by Dr. Dickinson, on "Professional Remuneration." Dr. Dickinson's treatment of this topic is less exhilarating.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon June 13, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 56, measles 15, typhoid fever 5.

BOVINE TUBERCULOSIS AT THE MASSACHUSETTS STATE INDUSTRIAL SCHOOL. — A second herd of imported cattle at the State Industrial School at Lancaster has been found affected with tuberculosis and the cattle have all been killed.

MEDICAL REGISTRATION LAW. — The Medical Registration Bill has passed both branches of the Massachusetts Legislature and received the Governor's signature. The full text of the bill has already been published in the JOURNAL.

THE ROCKLAND, ME., SMALL-POX HOSPITAL BURNED. — The house selected by the Rockland, Me., Board of Health for a small-pox hospital was burned June 8th. It is supposed that the fire was set by some one opposed to a quarantine hospital in that locality as the neighbors had already made much complaint of the selection.

SUFFOLK DISTRICT BOARD OF CENSORS. — The Board of Censors of the Suffolk District Medical Society will hold an adjourned meeting for the examination of candidates for the Massachusetts Medical Society on June 26th. This meeting is held for the convenience of students now taking their final examinations in the Medical School.

THE BOSTON CITY HOSPITAL CLUB. — The Executive Committee of the City Hospital Club has voted that in future the annual dinner of the Club be held some time during the winter months, instead of in June, as has been the case heretofore. It has been decided to hold the next dinner on the first Wednesday in February, 1895. It is proposed to make the annual meeting of the Club coincident with the dinner. No quorum being present at the annual meeting called for Tuesday, June 12th, an adjournment was voted to the first Wednesday in February, or subject to the call of the Executive Committee.

MRS. AMORY'S BEQUESTS TO HOSPITALS. — The will of the late Mrs. Jeanne P. Amory of Braintree directs the executors to sell within two years all her right, title and interest in the real estate at 111 West 57th St., New York City, and to divide the net proceeds equally between the Massachusetts General Hospital

in Boston, the City Hospital in Quincy, Mass., the Woman's Hospital and the Skin and Cancer Hospital, both in the city of New York.

THE NEW CONTAGIOUS HOSPITAL AT WALTHAM, MASS., NOT ACCEPTED BY THE BOARD OF HEALTH.—At its recent meeting the Waltham Board of Health refused to make use of the new contagious hospital on the ground that there are serious defects in its construction which render it unserviceable. The reasons they give are: first, that there is no cellar; second, there is no adequate method of heating; third, no provision has been made for proper ventilation; fourth, that the diphtheria and scarlet fever wards are too near each other; fifth, that there is no satisfactory method of procuring hot water. The desired alterations are estimated to cost over three thousand dollars.

THE MASSACHUSETTS DENTAL SOCIETY.—The Massachusetts Dental Society held its annual meeting in Boston on June 7th, 8th and 9th. The following-named officers were elected for the ensuing year: President, J. King Knights, D.D.S., of Hyde Park; First Vice-President, George A. Maxfield, D.D.S., of Holyoke; Second Vice-President, Waldo E. Broadman, D.M.D., of Boston; Secretary, Edgar O. Kinsman, D.D.S., of Cambridge; Treasurer, Edward Page, M.D., D.M.D., of Charlestown; Librarian, Thomas W. Clements, D.D.S., of Brookline; Executive Committee, Harry S. Draper, D.D.S., George C. Ainsworth, D.D.S., Joseph T. Paul, D.M.D., all of Boston; H. P. Cooke, D.M.D., of Worcester, and Robert T. Horn, D.D.S., of Brookline.

NEW YORK.

FATAL POISONING FROM WATER HEMLOCK.—Five ladies were fatally poisoned and six others made seriously ill at the Institute of the Sisters of Mercy, at Tarrytown on the Hudson, on June 4th, by eating what they supposed to be sweet-flag root. The root, which was dug up by laborers engaged in laying some drain pipes in the grounds of the institution, has been pronounced by Dr. N. L. Britton, Professor of Botany in Columbia College, and Dr. H. R. Rusby, Professor of Botany in the New York College of Pharmacy, to be that of the water hemlock. In most of the fatal cases death resulted within half an hour after the poisonous herb was eaten.

REPORTED DEATH FROM VACCINATION PROVES TO BE UNTRUE.—A short time since the announcement was made in the newspapers that a child three years of age had died from the effects of vaccination by one of the Board of Health's corps of vaccinators. The case was referred to the coroner's office for the death-certificate, as the attending physician had seen the child too short a time before its death to feel justified in making a certificate. The deputy coroner reported that death was due to tetanus induced by septicæmia which was the result of vaccination. The Board of Health felt satisfied that death was due to other causes, and ordered an investigation. On inquiring of other physicians who had seen the child, it appeared that the

cause of death was most probably a traumatic meningitis. An autopsy confirmed this diagnosis, and the coroner filed a new certificate of death from "Exhaustion resulting from convulsions from acute meningitis due to a fall."

Miscellany.

OPERATIVE SURGERY UNDER DIFFICULTIES.

THE recent death of Mr. Dickinson Crompton recalls the following story¹ of a surgical operation which he performed in his earlier years under great difficulty. He told the anecdote as follows:

"Some years ago I was called in the night to go to M—— to an accident, prepared to amputate. I found a poor laborer lying on his cottage bed, his left arm hanging over the edge of the bed, dropping blood into a chamber pot. The arm was black, as if it had already mortified. I heard that the man's arm had been caught in the cog-wheel of one of the agricultural machines, and was drawn in up to the shoulder. There was nothing for it but amputation above the injured part—in fact either close to the head of the humerus or by disarticulation of the whole. There was no room for a tourniquet, and I requested Mr. C., the surgeon of the village, to press upon the artery against the head of the bone.

"There was a boy in the room—an apprentice, I was told—but he declined to come near the patient to hold out the arm. I was therefore obliged to hold the artery against the head of the bone with my left hand, while Mr. C. held the arm out at full length by the hand; but he told me he always 'fainted at the sight of blood'; so turning his face and body away as far as possible, he held on till I had made my incision and sawn through the bone as high as I could.

"There was only a cottage candle in the room, and therefore I asked Mr. C. to hold it, so that I could look for the arteries, but he had had enough.

"The poor patient was sitting on a chair making no complaint; in fact I think there could not have been much pain felt, from the appearance of the parts; so he himself said, 'Sir, if you will give me the candle, I think I can hold it.' This he did, bringing his right hand round with the candle in it, so that I had a good view of the face of the stump. I was delighted to get my tired thumb and hand free, when I saw the orifice of the brachial and could pull it out by the tenaculum, and left it hanging till I could tie the artery, and so with the smaller vessels. After that I had no further difficulty, as only one or two small arteries seemed inclined to bleed.

"The man recovered, but I heard he died of phthisis six months afterwards."

THE FIRST EPIDEMIC OF MEASLES IN SAMOA.

THE virulence of a first epidemic of measles among a new race is well known, but actual occurrences under medical observation are not so common as to be uninteresting. Dr. S. H. Davies of Savaii, Samoa, publishes a brief account of the first epidemic of measles in that group of Islands.²

"It was brought first to Tonga in June, 1898, where

¹ Birmingham Medical Review, May, 1894.

² Australian Medical Gazette, April, 1894.

it nearly decimated the population. Three months later the same vessel brought the disease to Samoa. The entire population of the ten inhabited islands of the Samoa group is about 34,500; and by the first of this present year fully one thousand persons had died from measles, nearly half being adults. The epidemic was mild in its onset, and comparatively few died during the period of fever and eruption.

"The mortality from measles has arisen principally from the complications of gastritis, enteritis, diarrhoea and dysentery. A few died from suppressed measles. But the craving the natives have for raw fish, unripe or over-ripe fruit, and especially half-cooked *fresh pork*, became morbid during the period of convalescence. Many, lest they should be told to abstain from these, avoided foreign medicine. Nine-tenths of the deaths might have been prevented by care in diet. The worst cases of diarrhoea and dysentery yielded to treatment, and there were no deaths among those who followed instructions, and who were under one's own personal supervision. Since measles arrived, an unusually large number of these people including many adults, with their usual predisposition to scrofula, have suffered from the suppurating glands in the neck, submaxillary region and groin. Not a few had parotitis, going on to suppuration. During period of fever and rash there were numerous abortions. Single and multiple abscesses are very common at all times, but cases have been multiplied tenfold of late. Now that nearly three months have elapsed since last cases of fever and rash, a mild form of remittent fever is exceedingly common."

"The two epidemics of influenza in 1891 and 1893 increased the natural tendency of the Samoans to chest affections, and the measles has still further intensified their susceptibility. During the past two months two hundred persons, at the very least, have died from the effects of the measles epidemic which will be long remembered, as not one of the whole population seems to have escaped."

THERAPEUTIC NOTES.

THE INTERNAL TREATMENT OF VESICULAR ECZEMA.—Dr. Leslie Phillips writes to the *British Medical Journal* the results of observations made during the last two years on the effect of certain remedies given in the hope of obtaining some specific or direct action in modifying the morbid tendency of vesicular eczema in adults. Calcium sulphate was perseveringly employed in a large number of cases, always with a disappointing result. Ichthyol in pills seemed to have a slight modifying influence in one or two cases. Calcium chloride and thyroid glands both gave negative results. The hypophosphites appeared to be occasionally useful. Tartarated antimony was very helpful in not a small proportion of cases. It was given in sensible doses; namely, one-tenth to one-sixth of a grain thrice daily, and continued for long periods, it being seldom found needful to discontinue it on account of ill-effects.

TREATMENT OF DIPHTHERIA AT THE HOSPITAL TROUSSEAU.¹—The staff at the Hospital Trousseau in Paris, after trying various methods of treating diphtheria, has settled upon the following routine practice for exclusive use in all cases of diphtheria or doubtful angina, which is treated as diphtheria pending bacterio-

logical cultures. The local treatment consists in large irrigations with solutions of carbolic acid in the strength of 1 to 150 or 200, and in the application of an antiseptic varnish. These are used in all cases and stages of the disease. The douches are especially insisted on in septic cases. The false membrane is wiped away as much as possible by pledgets of absorbent cotton. The carbolic solution, tepid, is thrown from an irrigator directly upon the denuded area, and is afterwards run through each nostril until it returns clear. The varnish is applied by swabs of absorbent cotton upon the false membrane which is not detached, or the place it once occupied. The formula is:

2	Gum lac. (purified, wholly soluble in alcohol)	270 grammes
	Benzoin (purified, wholly soluble in alcohol)	10 "
	Balsam tolu	10 "
	Crystallized carbolic acid	100 "
	Essence of cinnamon	6 "
	Saccharine	6 "
	Alcohol to make one litre.	

The varnishing is repeated, according to the gravity of the case, every two or four hours during the day and every three or six during the night. In all cases the douching is repeated every two hours during the day and every three or four at night. "The application is naturally opposed by the child, but in view of the seriousness of the disease force is to be used if necessary. Accordingly, two or three persons are needed to immobilize the patient and hold the mouth open. On the first sign in the urine of carbolic intoxication the solution is to be changed for one of thymol or salicylic acid." The general treatment consists in (1) tonics (alcohol and quinine); (2) diuretics, to aid in the elimination of the diphtheria toxine; (3) caffeine or sparteine, for cardiac weakness; (4) a diet of milk, eggs or broth.

TREATMENT OF WHOOPING-COUGH BY QUININE.—Baron¹ recommends the use of quinine in pertussis, and from a study of some fifty cases draws the following conclusions. In a small number of cases a favorable effect is obtained very early, even as soon as the second or third day. In most cases the result is doubtful for the first few days because the larger number of the children have a tendency to vomit and an uncertain amount of the drug is retained. From the fifth or sixth day a decided improvement, both as regards the number and severity of the paroxysms, is noticed. This improvement advances rapidly and continuously even though the quinine is given in gradually smaller and less frequent doses. The time required for a cure by this method is given as not over three weeks, and in some cases is so short as to almost warrant calling the treatment abortive. The administration is advised after the following manner: Each single dose of the hydrochlorate of quinine is estimated at 0.01 gm. for each month and 0.1 gm. for each year of the child's age. This is to be given three times a day, preferably at 6 A. M. and 2 and 10 P. M. Strong babies, as a rule, require a somewhat larger dose than that scheduled for their age, while even children over four years of age rarely need more than 0.4 gm. t. i. d. Upon a manifest amelioration of the symptoms two doses daily only are needed with a gradual lessening of each dose. A single dose at night-time should be given for some time after apparent full recovery. The quinine may be given in solution (not advised, owing to the varying size of spoons used), in capsule or in sugar pellets.

¹ L'Union Médicale.

¹ Berlin klin. Wochenschrift, 46, 1893; Deutsche Med. Zeitung, 24, 1894.

The chocolate and quinine candies might seem to be of use. Especial importance is attached to a continuance of the treatment for a few days beyond apparent cure, to lessen any chance of too early omission of treatment.

Correspondence.

WEIGHT AS A SYMPTOM IN PHTHISIS.

DENVER, COL., June 4, 1894.

MR. EDITOR:—I wish to offer a few suggestions as to the method of treatment of phthisis discussed by Dr. Boardman in your issue of May 17th.

To me it seems that not sufficient stress has been placed upon one sign in the summary of the condition of the patient after the treatment mentioned. I refer to the gain or loss of weight. I believe that physicians are coming more and more to the belief that this one factor is of infinitely more importance than all others together in estimating a patient's progress, and a fatal objection to the method of treatment mentioned is, as I see it, that in only one of the ten cases given in detail was there any gain of weight, and in that one this gain amounted to only three pounds. One case held his own, and the other eight cases lost an aggregate of thirty-two and three-fourths pounds, or an average of more than four pounds each, in a treatment averaging a little over two months. The temporary gain which was lost before the end of the treatment, is not considered in this computation.

In an experience of more than a decade in the treatment of this disease in Colorado, I have become more and more impressed with the fact that those patients in whom a gain in weight is observed, generally do well, while those cases in which a loss occurs, no matter how gradual, do badly in the end. It is my custom to inform patients who complain of this or that symptom, that, so long as the gain in weight, which we generally see in incipient cases here, continues, I do not care very much about the other symptoms.

In our anxiety to establish the bacillary origin of this disease and to found a treatment upon this discovery, we have been in danger of losing sight of the one fundamental fact which underlies the whole matter, namely, that this disease is one in which the patient is on the road to physical bankruptcy. We all recognize the fact that, in the absence of this essential condition, the bacillus does not thrive in the human organism. Practically, the patient's salvation, when attacked, lies in an improved assimilation of food. When placed under such conditions as enable him to hold his own, and then to begin to gain in weight, we have, in this gain, a form of evidence that he is overcoming his bacillary antagonists, which is infinitely better than any which can be obtained in the laboratory. As well assume that a suspected bank must be all right because of the acquisition of a new set of office furniture, in spite of the known fact that its cash account is running behind, as to consider a case of phthisis improving because of improvement in certain symptoms when the weight is decreasing.

I do not mean to intimate that the writer has, by any means, attempted to lead us to believe that this treatment is better than other recognized methods, but merely wish to point out the fact that an important factor in estimating the true value of this or any other means of treatment of phthisis has been passed over too lightly in this contribution. To those of us who have repeatedly seen patients gain twenty-five or even fifty pounds of flesh in this climate, coincidently with the recovery of health, the idea of improvement without decided gain in weight in tuberculosis seems preposterous.

We are all under obligations to Dr. Boardman, however, for his careful record of the cases he has presented.

Yours very truly,

1517 State St.

J. N. HALL, M.D.

METEOROLOGICAL RECORD.

For the week ending June 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'ath'r. •		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.		8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.	
					8.00 A. M.	8.00 P. M.								
S..27	29.96	58	65	50	87	78	82	S.W.	S.E.	3	9	O.	C.	0.85
M..28	29.93	64	75	54	74	68	71	S.W.	S.	8	9	C.	O.	
T..29	29.85	56	59	54	93	90	92	S.E.	E.	23	3	R.	O.	
W..30	30.02	58	70	47	43	45	44	N.W.	S.W.	9	12	F.	O.	
T..31	29.81	50	54	48	93	97	95	E.	N.	15	7	R.	O.	
F..1	29.64	58	66	50	76	58	67	S.W.	S.W.	16	10	F.	C.	0.62
S..2	29.73	60	68	53	69	89	79	S.W.	S.	11	15	F.	R.	0.17
														0.04

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 2, 1894.

Cities.	Estimated population for 1893.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.	
New York	1,691,306	754	280	17.94	13.91	2.73	9.88	1.66	
Chicago	1,438,000	360	126	15.96	13.16	3.08	7.28	.56	
Philadelphia	1,115,562	363	148	17.28	9.99	2.16	9.72	1.33	
Brooklyn	978,394	185	62	12.42	14.04	.54	6.48	3.78	
St. Louis	560,000	180	58	13.86	15.40	6.16	.77	—	
Boston	487,397	130	48	13.86	15.40	6.16	.77	—	
Baltimore	500,000	130	48	13.86	15.40	6.16	.77	—	
Washington	308,431	130	48	13.86	15.40	6.16	.77	—	
Cincinnati	306,000	130	48	13.86	15.40	6.16	.77	—	
Cleveland	290,000	130	48	13.86	15.40	6.16	.77	—	
Pittsburg	263,709	81	48	23.37	6.15	6.15	3.69	—	
Milwaukee	250,000	81	48	23.37	6.15	6.15	3.69	—	
Nashville	87,754	33	12	8.06	21.21	—	—	3.03	
Charleston	66,165	41	15	17.08	9.76	14.64	2.44	—	
Portland	40,000	33	11	21.21	15.15	—	6.06	3.03	
Worcester	36,217	33	11	21.21	15.15	—	6.06	3.03	
Fall River	87,411	33	12	21.21	9.09	12.12	—	—	
Lowell	87,191	33	12	21.21	9.09	12.12	—	—	
Cambridge	77,100	26	10	11.55	11.55	—	—	7.70	
Lynn	62,606	18	4	22.22	11.11	5.55	—	—	
Springfield	48,694	8	1	—	—	—	—	—	
Lawrence	48,365	18	5	11.11	—	11.11	—	—	
New Bedford	45,886	22	7	9.10	9.10	4.55	4.55	—	
Holyoke	41,278	—	—	—	—	—	—	—	
Salem	32,283	9	5	—	11.11	—	—	—	
Brockton	32,140	4	0	50.00	—	25.00	—	—	
Haverhill	31,398	9	0	—	22.22	—	—	—	
Chelsea	30,264	13	4	7.69	30.76	—	—	—	
Malden	29,394	5	1	—	20.00	—	—	—	
Newton	27,666	5	2	—	—	—	—	—	
Fitchburg	27,146	5	0	—	20.00	—	—	—	
Taunton	26,972	6	1	16.66	—	—	16.66	—	
Gloucester	26,688	—	—	—	—	—	—	—	
Waltham	22,058	5	2	20.00	—	—	—	20.00	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,602	5	0	20.00	—	—	—	20.00	
Everett	16,585	6	1	—	—	—	—	—	
Northampton	16,331	5	0	—	20.00	—	—	—	
Newburyport	14,073	4	0	—	—	—	—	—	
Amesbury	10,920	6	0	—	16.66	—	—	—	

Deaths reported 2,227: under five years of age 816; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 366, consumption 283, acute lung diseases 278, diphtheria and croup 161, diarrhoeal diseases 69, scarlet fever 36, whooping-cough 32, typhoid fever 18, measles 17, cerebro-spinal meningitis 15, small-pox 7, erysipelas 6, malarial fever 5.

From whooping-cough Brooklyn, Washington and Pittsburg 6 each, Philadelphia 5, New York 3, Fall River 2, Boston, Cambridge, Lynn and Somerville 1 each. From typhoid fever Philadelphia 7, Washington 3, Brooklyn, Pittsburg and Worcester 2 each, New York and Nashville 1 each. From measles New York 6, Philadelphia and Brooklyn 4 each, Pittsburg 3. From cerebro-spinal meningitis New York 8, Worcester and Lynn 2 each, Boston, Brockton and Chelsea 1 each. From small-pox New York 6, Brooklyn 1. From erysipelas New York 3,

Philadelphia, Brooklyn and Boston 1 each. From malarial fever New York 2, Philadelphia, Brooklyn and Fall River 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,412, for the week ending May 26th, the death-rate was 17.7. Deaths reported 3,543: acute diseases of the respiratory organs (London) 248, measles 248, whooping-cough 128, diphtheria 62, scarlet fever 41, diarrhoea 38, fever 31, small-pox (London 7, West Ham and Birmingham 2 each) 11.

The death-rates ranged from 10.1 in Plymouth to 28.4 in Salford; Birmingham 18.6, Bolton 16.7, Croydon 11.2, Hull 14.2, Leicester 15.2, Liverpool 20.9, London 17.3, Manchester 22.1, Newcastle-on-Tyne 18.8, Nottingham 21.0, Sheffield 17.4, Swansea 14.8, Wolverhampton 21.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 2, 1894, TO JUNE 8, 1894.

Upon being relieved from duty at Camp Merritt, Montana, by FIRST-LIEUT. WILLIAM H. WILSON, assistant surgeon, FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, will proceed without delay to Fort Yellowstone, Wyoming, and report to the commanding officer for temporary duty with troops in the National Park during the season.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 9, 1894.

GEO. A. BRIGHT, medical inspector, detached from U. S. S. "Newark," ordered home and granted three months' leave.

R. A. MARMION, surgeon, detached from Smithsonian Institution and ordered to the U. S. S. "Newark."

D. McMURTRIE, medical inspector, ordered to the Smithsonian Institution.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING MAY 26, 1894.

MURRAY, R. D., surgeon. To proceed to Brunswick, Ga., for special duty. April 30, 1894. To proceed to Waynesville, Ga., as inspector. May 17, 1894.

HUTTON, W. H. H., surgeon. Detailed for duty as inspector of Quarantine Stations. April 27, 1894.

HAMILTON, J. B., surgeon. Granted leave of absence for three days. May 14, 1894.

GASSAWAY, J. M., surgeon. Granted leave of absence for fifteen days. May 12, 1894. Leave of absence extended five days. May 26, 1894.

STONER, G. W., surgeon. To inspect Cape Charles Quarantine Station, monthly. April 27, 1894. Granted leave of absence for thirty days. May 18, 1894.

GODFREY, JOHN, surgeon. To represent the service at meeting of the American Medical Association at San Francisco, Cal. May 11, 1894.

IRWIN, FAIRFAX, surgeon. To proceed to Berlin, Germany, for special duty. May 5, 1894.

CARTER, H. R., surgeon. Granted leave of absence for three days. May 3, 1894. To proceed to Key West Quarantine for temporary duty. May 4, 1894.

BANKS, C. E., passed assistant surgeon. Granted leave of absence for five days. May 1, 1894.

CARMICHAEL, D. A., passed assistant surgeon. To proceed to St. Louis, Mo., for temporary duty. May 15, 1894.

PECKHAM, C. T., passed assistant surgeon. To proceed to San Francisco Quarantine Station for duty. May 17, 1894.

GLENNAN, A. H., passed assistant surgeon. To proceed to Wilmington, Del., for special temporary duty. April 26, 1894.

WHITE, J. H., passed assistant surgeon. To inspect quarantine Stations. April 27, 1894. Granted leave of absence for seven days. April 29, 1894. Granted leave of absence for twenty-three days. May 4, 1894.

BRATTON, W. D., passed assistant surgeon. To report at Bureau and then to proceed to Delaware Breakwater Quarantine for duty. May 19, 1894.

MAGRUDER, G. M., passed assistant surgeon. To proceed to Key West Quarantine Station for duty. May 15, 1894.

KINYOUN, J. J., passed assistant surgeon. To proceed to Wilmington, Del., for special temporary duty. April 26, 1894. Detailed as chairman, Board for physical examination officers, Revenue Marine Service. April 30, 1894. Detailed to attend

annual meeting State Board of Health of North Carolina. May 11, 1894. To inspect property at Wilmington, N. C. May 14, 1894.

WOODWARD, R. M., passed assistant surgeon. To proceed to Chicago, Ill., for special duty. May 7, 1894.

VAUGHAN, G. T., passed assistant surgeon. Detailed as recorder, Board for physical examination officers, Revenue Marine Service. April 30, 1894.

STONER, J. B., passed assistant surgeon. To inspect quarantine ports. April 26, 1894.

PERRY, J. C., passed assistant surgeon. To assume command of service at Norfolk, Va. May 4, 1894.

YOUNG, G. B., assistant surgeon. To proceed to Key West, Fla., for duty. May 15, 1894.

BROWN, B. W., assistant surgeon. To proceed to Pittsburg, Pa., for duty. April 27, 1894.

ROSENAU, M. J., assistant surgeon. To proceed to Boston, Mass., for duty. April 23, 1894.

COFER, L. E., assistant surgeon. To proceed to San Diego, Cal., as inspector, and to assume command of the service after June 30th. April 26, 1894.

EAGER, J. M., assistant surgeon. To proceed to New Orleans, La., for duty. May 16, 1894.

NYDEGGER, J. A., assistant surgeon. To proceed to Savannah, Ga., for duty. April 28, 1894.

STRAYER, EDGAR, assistant surgeon. To report for duty on Revenue Bark "Chase." April 28, 1894.

OAKLEY, J. H., assistant surgeon. To rejoin station San Francisco, Cal. May 16, 1894.

PROMOTIONS.

G. B. YOUNG, assistant surgeon. Commissioned as passed assistant surgeon. May 25, 1894.

W. G. STIMPSON, assistant surgeon. Commissioned as passed assistant surgeon. May 25, 1894.

APPOINTMENTS.

ARTHUR B. THOMAS, of Illinois, commissioned as assistant surgeon. May 25, 1894.

HENRY W. WICKES, of Maryland, commissioned as assistant surgeon. May 25, 1894.

HUGH S. CUMMING, of Virginia, commissioned as assistant surgeon. May 25, 1894.

APPOINTMENT.

Governor Greenhalge has appointed MR. HENRY S. HOWE, of Brookline, Trustee of the Massachusetts General Hospital in place of MR. T. E. PROCTOR, resigned.

BOOKS AND PAMPHLETS RECEIVED.

Non Nocere. By A. Jacobi, M.D., New York. Reprint. 1894.

Transactions of the Indiana State Medical Society, 1893, Forty-Fourth Annual Session held in Indianapolis, Ind., May 11 and 12, 1893.

Two Cases of Brain Tumor; A Contribution to Cerebral Surgery. By Clarence Bartlett, M.D., and W. B. Van Lennep, A.M., M.D. Reprint. 1894.

Physiotherapy First; Nature's Medicaments before Drug Remedies: Particularly Relating to Hydropathy. By Edward Playter, M.D., Ottawa. Reprint. 1894.

Removal of the Gasserian Ganglion as the Last of Fourteen Operations in Thirteen Years for Tic Douloureux. By W. W. Keen, M.D., and John K. Mitchell, M.D. Reprint. 1894.

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Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.¹

BY REGINALD H. FITZ, M.D., BOSTON.

(Continued from No. 24, p. 585.)

THE success of medical legislation in this country is now a matter of history; and it will be attempted to give a short sketch of what has been accomplished.

According to the researches of Dr. Joseph M. Toner,¹¹ the earliest legislation in the colonies relative to the practice of medicine was in Virginia in 1639. It appears that the charges of physicians and surgeons were so excessive

"that the hearts of divers masters were hardened rather to suffer their servants to perish for want of fit means and applications than by seeking relief to fall into the hands of griping and avaricious men; it be apprehended by such masters, who were more swayed by politick respects than Xian duty or charity, that it was the more painful and saving way to stand to the hazard of their servants than to entertain the certain charge of a physitian or chirurgern, whose demands for the most part exceed the purchase of the patient."¹²

A few years later this act was revised for the purpose of making a distinction between the charges of "surgeons, apothecaries, or such as have only served apprenticeship to those trades, who often prove very unskilful in the art of a physician"; and of those who have studied physic in any university and taken any degree therein.¹³

In 1649 Massachusetts passed a law forbidding "phisitians, chirurgians, midwives, or others," presuming "to exercise or putt forth any act contrary to the knowne rules of arte," or exercising "any force, violence or cruelty . . . no, not in the most difficult and desperate cases, — without the advice and consent of such as are skilful in the same arte, etc., etc."¹⁴ This law was also inserted in the Duke of York's laws enacted about 1665 for the government of the province of New York.

Dr. Toner's valuable article contains no evidence of further attempts at regulating the practice of medicine during the subsequent century. The number of carefully educated physicians was inconsiderable, quacks abounded, and of New York in 1753 it was stated: ¹⁵

"That place boasts the honor of above forty gentlemen of the faculty, and far the greatest part of them are mere pretenders to a profession of which they are entirely ignorant." . . .

"The war resulting in the conquest of Canada and subjugation of the French in 1763 created a demand for skilled medical officers and aided in the training of American students. Many of the English medical staff remained for several years in the vicinity of New York, establishing military hospitals and aroused the ambition of the colonial practitioners."¹⁶ . . .

"Although partial recognition of the profession and protection of the people had been secured in several of the colonies, and particularly in some of the larger cities, by legislation, the first well considered act regulating the prac-

tice of physics was that passed in New York, June 10, 1760, beginning as follows: 'Whereas many ignorant and unskilful persons in physick and surgery, in order to gain a subsistence, do take upon themselves to administer physick and practise surgery in the city of New York, to the endangering of the lives and limbs of their patients, and many poor and ignorant persons inhabiting the said city, who have been persuaded to become their patients, have been great sufferers thereby; for preventing such abuses for the future —

"1. *Be it enacted,*" etc."¹⁷

According to this act no person was allowed to practise, under a penalty of five pounds and costs, who had not previously passed an approved examination in physic and surgery before one of his Majesty's council, the Judges of the Supreme Court, the Attorney-General and the Mayor for the time being, or any three of them, taking to their assistance for such examination such person or persons as they in their discretion shall think fit.¹⁸

Twelve years later a similar act was passed in New Jersey at the instigation of the New Jersey Medical Society, and was the first comprehensive, protective law applied to a colony, the legislation above mentioned applying only to the city of New York. The examination was approved of and admitted by "any two of the judges of the supreme court, taking to their assistance for such examination such person or persons as they in their discretion shall think fit."¹⁹

In the following year, 1773, the code of Virginia required every surgeon, physician and dentist to take out a license, which authorized the holder to practise anywhere in the colony. Neglect to procure a license was punishable by a fine of not less than thirty nor more than one hundred dollars, nor could such negligent practitioners collect compensation for services.²⁰ In the same year, in Connecticut, a law for the suppression of mountebanks was enacted,²¹ although a year later the Lower House of Assembly in this colony negatived the memorial of Norwich physicians asking for the appointment of a committee legally authorized to examine and approve candidates if found qualified.²²

The War of the Revolution now occurred. Dr. Toner²³ thinks it probable that at this time

"there were not living in all the colonies 400 physicians who had received medical degrees; and yet, as is stated elsewhere, there were presumed to be over 3,500 practitioners."

According to the same authority,²⁴ the war gave

"great impetus and energy to the whole population of the colonies. The experience gained by the medical men who served in the army elevated their views, gave them confidence in the exercise of their professional duties, endeared them to the public, and made them almost oracles in the communities in which they resided. The spirit of gratitude also created friends for the profession in the various legislatures, led to the enactment of laws which were more just and protecting in their character, and popularized the more recent and thorough modes for the scientific study of medicine."

In 1783 New Jersey was the first of the States to pass a law regulating the practice of medicine. It was followed in 1792 by New York, which demanded of

¹ The Annual Discourse before the Massachusetts Medical Society, delivered June 13, 1894.

¹¹ Contributions to the Annals of Medical Progress and Medical Education in the United States before and during the War of Independence, 1874.

¹² Henning's Statutes at Large, i, 316, 317; Toner, loc. cit.

¹³ Henning, op. cit., iv, 509, 510; Toner, loc. cit.

¹⁴ Records of Massachusetts, 1854, III, 153.

¹⁵ New York Independent Reflector, Toner, loc. cit., 49.

¹⁶ Davis, History of Medical Education; Toner, loc. cit., 37.

¹⁷ Toner, loc. cit., 51.

¹⁸ Trans. Med. Soc. State of New York, 1840-43, 12.

¹⁹ Toner, loc. cit., 52.

²⁰ Trans. Ill. State Med. Soc., 1881, xxxi, 256.

²¹ Toner, loc. cit., 70.

²² Times and Register, 1893, xxvi, 1027.

²³ Toner, loc. cit., 106.

²⁴ Toner, loc. cit., 107.

practitioners in the city and county of New York two years of study with a reputable physician, if the candidate was a graduate of a college in the United States, otherwise three years of study. Also an examination before the Governor, Chancellor, Judges of the Supreme Court, Attorney-General, Mayor and Recorder of the city of New York, or any two of them who were to take to their assistance any three respectable practitioners with whom the examined person had not lived. The certificate of this board was a license to practise, and without it no legal demand could be made for services. Physicians who had regularly received the degree of Doctor of Medicine, those already in practice, and consulting physicians from neighboring States or counties were exempt from the provisions of this law. The above, somewhat modified, was made, in 1797, the general law of the State.²⁵

In 1798 power was given to the Medical and Chirurgical Faculty of Maryland to grant licenses "upon full examination or upon the production of diplomas from some respectable college." The penalty for practising without a license was \$50.00 for each offence.²⁶

During the first forty years of the present century, legislation, with a view to regulate the practice of medicine, was frequent and various. The initiative was taken by those desirous of protecting the people from ignorance, lack of skill and extortion; and the opposition came from quacks and pretenders of every kind.

New York, in 1806, incorporated medical societies for the purpose of regulating the practice of physic and surgery, following the example set by Massachusetts, and which proved so successful in that State after the amendments adopted by the Massachusetts Medical Society in 1804. In 1808, a few years after the territory of Orleans was set off from the Louisiana purchase, a bill was enacted by the territorial government, stating "that no person shall presume to practise medicine" without an examination, for which a diploma from some university or school was a qualification. This law was amended in 1816, and was enacted as the law for the State of Louisiana.²⁷

From this time on, State after State passed some form or other of a law for the prevention of quackery. And it is stated by Senn²⁸ that during the first half of our national existence every State had enacted such laws, with the exception of Pennsylvania, North Carolina and Virginia.

These laws, however, did not long remain operative; they were premature in many instances, there not being enough educated physicians to provide for the needs of the people. Quacks thus found their way into the remoter sections of the State, and their presence and assertions were welcomed by the sick and infirm. They practised in defiance of the law, whereas, now, unlicensed practitioners are declared exempt from the penalties of the law in States like Arizona and Idaho, when there is no licensed physician living within a convenient distance of the patient. Quackery spread from the remoter districts towards the centres of population, became more and more popular, and excited the more sympathy the more it was opposed. The difficulties in the way of enforcing the laws became greater. Juries refused to convict, officers of the

medical societies neglected to bring charges, and finally the laws were so amended as to exempt all quacks, mountebanks and charlatans from the penalties. This result attained, the laws became useless, and in certain States were effaced from the Statute Book.

The first serious blow to the regulation by the State of the practice of medicine was the result of the spread throughout the country of the doctrines of Samuel Thomson, who died in 1843. He was an illiterate farmer of New Hampshire, an empiric of the first water, but distinctly a remarkable man. He denounced the heroic treatment then in vogue by means of bleeding, mercurials and mineral medicines in general, and advocated the use of certain vegetable agents whose value he claimed to have discovered. He stated that he was in the habit of tasting herbs and roots, and was thus enabled to ascertain what were useful for any particular disease. In his "Narrative,"²⁹ first published in 1822, he announces as his general plan of treatment:

"to cleanse the stomach by giving No. 1, and produce as great an internal heat as I could by giving No. 2, and when necessary made use of steaming, in which I have always found great benefit, especially in fevers; after this I gave No. 3, to clear off the canker; and in all cases when the patient had not previously become so far reduced as to have nothing to build upon, I have been successful in restoring them to health."

No. 1 consisted of lobelia; No. 2 of red pepper; and No. 3 of a variety of herbs, including rosemary, bayberry, myrtle, sumac or raspberry, although he states that a great many other articles were "useful in removing canker."

In 1809, he was tried for the murder of one of his patients.³⁰

"As the learned Judge could find no law, common or statute, to punish the accused, he directed or advised those present to stop this quackery, as he called it, and for this purpose to petition the Legislature to make a law that should make it penal for all who should practice without license from some medical college to debar them of law to collect their debts; and if this should not answer, to make it penal by fine and imprisonment.

"This hint, thus given by the judge, was seized upon first in Massachusetts; from thence it has spread to nearly all the States of the Union. From this source may be traced all those unconstitutional laws which have been enacted in relation to this subject, and all those vexatious suits which I have had to attend in many of the States, from Massachusetts to South Carolina, more or less almost every year since. But I have been able to break them down by my patent being from higher authority, which Judge Parsons could not prevent, or perhaps he never thought of. He, however, made his own report, and handed it to the reporter, which is published in the sixth volume of Massachusetts Reports, and is resorted to by all the enemies of the practice for a defence against the system."

He afterwards brought suit against his principal accuser, Dr. French, which came to trial, again before Chief Justice Parsons, in 1811.³¹

"The judge then gave his charge to the jury, which was considered by those who heard it, to be the most prejudiced and partial one that they had ever heard. He made use of every means to raise the passions of the jury and turn them against me; stating that the defendant was completely justified in calling me a murderer, for if I was not guilty of wilful murder, it was barbarous, ignorant murder; and

²⁵ Trans. Med. Soc. State of New York, 1840-43, 12.

²⁶ Quinan, New York Med. Record, 1886, xxix, 505.

²⁷ Challis, New Orleans Med. and Surg. Journal, 1877-78; N. S., 590.

²⁸ Trans. Wis. State Med. Soc., 1879, xiii.

²⁹ A Narrative of the Life and Medical Discoveries of Samuel Thomson, etc., 8th ed., 1832.

³⁰ Op. cit., p. 167.

³¹ Op. cit., p. 176.

even abused my lawyers for taking up of me, saying that they ought to be paid in screw augers and bull dogs."

The jury brought in a verdict for the defendant.

In 1813 he obtained a patent to secure to him the exclusive right of his system, and to put him above the reach of the law in any State. But in 1821 Judge Story decided that its specifications were improperly made out, and in 1823 a new patent was obtained.²²

"The preparing and compounding the foregoing vegetable medicines, in manner herein described, and the administering them to cure disease, as herein mentioned, together with the use of steam to produce perspiration, I claim as my own invention."

The simplicity of his theories of disease and of its treatment, the use of simples, always commending itself to the popular mind, and the notoriety attained by numerous lawsuits, all served to attract attention to Thomson's doctrines. Many editions of his writings were published, and agents were employed to travel throughout the States, selling with the book and medicines a family right to practise for \$20.00. "Friendly Botanic Societies" were established, the membership being composed of those who had purchased family rights, and the privileges in which are stated by him as follows:²³

"Every one who purchases a right for himself and family, becomes a member of the Friendly Botanic Society, and is entitled to all the privileges of a free intercourse with each other, and to converse with any one who has bought a right, for instruction and assistance."

Thomson's doctrines were especially favored in the eastern section of Massachusetts, and along the adjacent borders of Maine, New Hampshire and Vermont.

After the publication of his "Narrative" and the employment of agents, he and they travelled extensively in the South and West. Although they were unlicensed practitioners in most States, the laws had no penalties sufficient to prevent them from practising. His followers succeeded in securing the enactment of laws by which no person was to be debarred from using or applying for the benefit of the sick person any roots, barks or herbs, the growth or produce of the United States. At first the proviso was added, that they should be unable to recover by process of law any debt incurred from such practice. This objection was easily met by obtaining fees in advance. The restriction was of greater value to them for advertising purposes in creating sympathy, and we learn²⁴ that "thousands have had their sympathies enlisted in their behalf; have come to believe their senseless clamor, and had their prejudices aroused against the medical profession." Finally medical schools, called "eclectic," were established by those who were willing to take advantage of Thomson's success, adopting his practice, but avoiding his interference.

Thomsonianism prepared the way for the success of homœopathy, which proved to be the more effectual agent in annulling the licensing of physicians. In the words of Dr. J. W. Hamilton,²⁵ "It swaggered on the stage long enough to give a wholesome check to the excesses that brought it into being, and proved itself the bloodiest murderer that ever visited our too credulous community in the form of quackery."

In certain respects homœopathy bore a close resemblance

to Thomsonianism. It represented a reaction from the heroic treatment of the regular physicians; it offered a few remedies, although in palatable form, with such specific and authoritative directions that the family provided with pellet and pamphlet had but little need of the educated physician. Its leaders, however, came from the ranks of the latter, and its followers were to be found among the more intelligent, prosperous and influential members of society. Its adherents increased in numbers in the cities and larger towns, and it threw upon the opposition it encountered from members of the regular profession. Like Thomsonianism, it called for sympathy on the ground of intolerance, and persecution on the part of licensed physicians, and Thomsonianism and homœopathy combined succeeded in so emasculating existing laws regulating the practice of medicine that they became useless, and their removal from the statutes was often sought by all alike.

In 1838, Maryland made it lawful for every citizen of the State to charge and receive compensation for his services and medicines. In the following year, Georgia passed a revised medical act, in which it was "provided nothing be so construed as to operate against the Thomsonian or botanic practice or any other practitioners of medicine in this State."²⁶ A few years later, in 1847, it established a Botanico-medical board, with the same powers and duties as the regular board.²⁷ In New York, in 1844, a bill was enacted, of which Judge Beardsley said: "Since the passage of the act of 1844, quackery may certainly boast its triumphant establishment by law."²⁸

At the close of the first half of the present century there were practically no efficient laws controlling the practice of medicine by the licensing of physicians in this country. The history of such legislation in Massachusetts from the War of the Revolution to that of the Rebellion has been given elsewhere.²⁹ Existing laws had either been repealed or were not enforced, and the regularly educated physicians had ceased in their efforts to suppress quackery by attempting any legislative prohibitory enactments. They were largely responsible for this result. With the best of intentions throughout these fifty years, they failed to read aright the signs of the times, and by errors of omission and of commission they rather aided the progress of quackery than checked its growth.

With the incorporating of medical societies by the State, the licensing of physicians was placed in their hands. Examining boards were established and candidates were to appear before them. But in some States these boards were so few, and the members lived so far apart, that the examinations were not held. Such evasions of the law made it easy for a rejected candidate to obtain a special act of the legislature allowing him to practise. In case of rejection by one board he might appear before another less exacting. If all the boards in any one State were too stringent, it was possible for the candidate to obtain a license in another State, where the terms were less rigid, even by mere payment of the registration-fee. A license thus obtained was usually valid in other States. If he practised in violation of the law, it was the duty of no one to bring suit. Although the licensing power was transferred by the State to the medical societies, members

²² Op. cit., p. 243.

²³ Op. cit., p. 220.

²⁴ Trans. Med. Soc., State of New York, 1844-49, vi, 46.

²⁵ Trans. Ohio State Med. Soc., 1867, 36.

²⁶ Trans. Med. Soc., State of New York, 1844-49, vi, 46.

²⁷ Southern Med. and Surg. Journal, 1866, 7, 3d s., i, 456.

²⁸ Purrington, New York Med. Record, 1886, xxx, 452.

²⁹ The President's Address, Trans. Assoc. Am. Phys., 1894, ix.

of the latter were unwilling to act as accusers and prosecutors from the demand it made upon them for time and money, and the necessity it placed them under of assuming a disagreeable and opprobrious task. Even if cases were brought to trial conviction was difficult, since the penalty was so severe that the jury was unwilling to condemn what it was told was essentially a difference of opinion.

What must be regarded as their chief mistake was the treatment of their homœopathic brethren. Irrespective of all questions of ethics it was a decided and decisive error of policy. The latter were educated physicians, certainly as honest as many of their associates, whatever may be said of their intelligence. Their expulsion and ostracism created two powerful opponents, largely representing two distinct classes of society, but united in their efforts to resist repression. The botanic, eclectic and physio-medical practitioners (the off-shoots and successors of Thomsonianism) and the homœopathists, as they increased in numbers and strength, were, combined, enabled to secure the repeal of all restrictive legislation. They became exempted by law from the need of a license, and the regular physician saw no necessity of paying the fee for a license which placed him in no different light before the public than the quack. As the irregulars formed chartered medical societies with the same privileges as those possessed by the regular societies, members of the latter in many States became active in securing the repeal of laws which proved of no value to the community. Eclectic and homœopathic medical schools were established, and the name of physician and the title of doctor of medicine no longer became of the least value in acquainting the public with any distinction between the educated practitioner and the ignorant pretender, and no check whatever was placed on the increase of the latter.

An interval of some twenty years now elapsed, during the first half of which the State medical societies were perfecting their organization with the view of maintaining a high standard of membership. A certain degree of uniformity in this action was the result of the formation of the American Medical Association in 1847. The annual meetings of this organization brought together representative men from the various State societies, most of whom had been actively interested in the legislative control of medical practice. They endeavored to improve the standard of medical education and the ethics of the regular profession throughout the country. The War of the Rebellion created a sudden and extensive demand for educated physicians and surgeons, their numbers speedily increased, and the subsequent rapid growth of the country has continued this increase. The brilliant progress in the various specialties of medicine made more apparent the distinction between the educated and skilful physician and the ignorant but pretentious quack. Homœopathic and eclectic medical schools were paying more attention to the instruction of their students, and the line was thus being more sharply drawn between practitioners of no training and those who had received some teaching. All educated physicians, whatever their degree of instruction, were interested in defending the community from mere pretenders, and their combination has led to the successful medical legislation of the past twenty-five years.

Since the law recognizes no distinction between regulars, homœopathists and eclectics, on the contrary, the

legislators have given like privileges to each, by incorporating them into medical societies and medical schools, it became obvious that if any legislation was to be secured against the worst forms of quackery, it must be obtained by the practical agreement of these incorporated medical bodies. The numerous experiments which have been made in the various States during the past twenty-five years, and which have led to the enactment of licensing laws in nearly all the States and Territories, have been the result of this harmony of action.⁴⁰ It has been justified not only by the needs of the community for protection, but also by the fact that both homœopathists and eclectics represent a kind of practitioner whose education is constantly improving. Homœopathists, in particular, have been, from the beginning, physicians of a certain, and at times of a considerable degree of education. They are honestly and earnestly endeavoring to improve their educational facilities, and some of the eclectic schools are following in their footsteps.

In 1872, a bill was prepared under the auspices of the New York Medico-Legal Society, and was favorably acted upon by the legislature, but was subsequently vetoed by the governor.⁴¹ This unsuccessful attempt was followed in 1873 by the passage of a law in Texas, requiring the registration of diplomas by all practitioners entering the State. It was repealed and replaced in 1876 by an act establishing boards of examiners, who were to examine all applicants for certificates of qualification without preference to any school of medicine. This law, to-day, in the words of Dr. West of Galveston, "is practically inoperative, as but few boards are organized, and about most that any of them do is to license non-graduates."

In the District of Columbia in 1874 it was the duty of every physician to register at the office of the board of health, under penalty of from \$25.00 to \$200.00. This regulation was legalized by Congress in 1880. All physicians required to register must do so upon a license from some chartered medical society, or upon a diploma from some medical school or institution.

The law of Nevada, enacted in 1875, makes a law practitioner one who has received a medical education and a diploma from some regularly chartered school having a *bona fide* existence when the diploma was granted. The county recorder accepts the diploma.

In 1877 a law was passed in Alabama according to which a license or diploma, or certificate of qualification, was essential to the lawful practitioner. If he wished to practise any irregular system, he was obliged to pass an examination in anatomy, physiology, chemistry and the mechanism of labor before the Censors of the Medical Association of the State of Alabama, or of some affiliated County Medical Society. This act was replaced by that of 1887, which was amended in 1891, and according to Dr. Cochran of the Board of Censors is

"almost ideally perfect. If the State would invite us to change it according to our wishes, we would not know what change to suggest. All we have to ask of the State is

⁴⁰ For much of the information relative to the provisions of the laws in the various States and Territories, I am indebted to the admirable Synopsis of the existing Statutes, prepared by William A. Poste, late deputy attorney-general of the State of New York, and Charles A. Boston, Esq., of the New York City Bar, for the text-book of Medical Jurisprudence, Forensic Medicine and Toxicology, of Witthaus and Becker, just published. By the aid of our librarian, Dr. E. H. Brigham, I have been enabled to obtain from the respective officials of many of the States copies of the medical licensing laws of these States, and take this opportunity of expressing my thanks to all concerned.

⁴¹ New York Med. Journal, 1874, xx, 64.

simply to let our law stand as it is and enforce it in the courts. . . . We have a very few homœopathic practitioners in Alabama, but a considerable number of doctors who, graduated in eclectic schools, have availed themselves of the advantages we have to offer them, and have become good working members of our organization."⁴⁸

In the same year Illinois passed its first law, which was amended in 1887. It is unnecessary to enter into the details of medical legislation during the next fourteen years. It is merely to be stated that laws were passed as follows:

<i>Year.</i>	<i>State or Territory.</i>
1880	Vermont.
1882	Georgia, Rhode Island.
1883	Maine, Michigan, North Carolina.
1884	New Mexico.
1885	Indiana.
1886	Iowa.
1887	California, Idaho, Minnesota, Virginia, Wisconsin, Wyoming.
1888	Tennessee.
1889	Delaware, Kansas, Missouri, Montana, Oregon.
1890	New Jersey, North Dakota, Ohio, South Carolina, Washington.
1891	Colorado, Nebraska, West Virginia.
1892	Florida, Maryland, Mississippi, Utah.
1893	Arkansas, Arizona, Connecticut, Kentucky, New York, Oklahoma, Pennsylvania, South Dakota.

(To be continued.)

Original Articles.

THE FREQUENCY OF RENAL ALBUMINURIA, AS SHOWN BY ALBUMIN AND CASTS, APART FROM BRIGHT'S DISEASE, FEVER, OR OBVIOUS CAUSE OF RENAL IRRITATION.¹

BY FREDERICK C. SHATTUCK, M.D., OF BOSTON.

IN no branch of human activity, perhaps, can more striking illustrations be found of the dangers of hasty conclusions from insufficient data than in medicine. This is no reflection on our calling. It naturally flows from the fact that our knowledge of many things is still very imperfect, while the demands for the practical application of our knowledge are constant and imperative. The sick man wants instant help, and cannot wait while doubtful points are being settled. Medicine is more than an art, less, in a sense, than an exact science. The clinical significance of albumin and casts affords one of these illustrations. The chemical preceded the microscopical examination of the urine, and the latter first made it possible to determine with any accuracy the portion of the urinary tract from which the albumin is derived. The presence of casts shows that the true renal tissue is involved, and was for some time held to be diagnostic of Bright's disease. I well remember the grave prognosis which the discovery of albumin and casts was thought to necessitate when I was a hospital interne, not much more than twenty years ago. Perhaps I incorrectly interpreted my teaching — students sometimes do — but I think this was at that time generally regarded by the profession as damning evidence. Albumin and casts meant Bright's disease, and that meant an in-

evitably and more or less rapidly fatal disease. Further experience and the irresistible logic of facts has led to such changes in these views that considerable discussion has been held as to whether albuminuria might not be physiological, so common is it found to be, so little bearing may it have on the vigor or longevity of its possessor. Into this discussion I do not propose really to enter. Absolute physical perfection is occasionally found in the human being; but the ideal and the real are nearly as sharply contrasted in the more purely bodily as in the moral qualities. Whether there be a physiological albuminuria is largely a matter of definition of the word physiological.

Much ingenuity has been devoted to the discovery and application of tests of extreme delicacy for albumin. My friend and colleague, E. S. Wood, assures me that for clinical and qualitative purposes none of these tests can compare with the old heat and nitric acid tests; and I am glad to see similar views expressed very recently by D. D. Stewart,² of Philadelphia. These are the tests used in the cases which I have analyzed. A cloudiness of the boiled upper layer of urine in the test-tube after the addition of acetic acid, and the opaque zone with nitric acid are therefore considered proof positive of the presence of albumin, as a negative result is proof of its absence. To my eye the heat test is the more delicate of the two, but I know that all do not find it so. Vaunderpoel,³ in a recent paper on albuminuria without manifest organic renal lesion, has collected the literature of the subject and justly calls attention to the discrepancy which exists between the percentages of different observers examining considerable numbers of presumably healthy persons. Chateaubourg finds albuminuria in 84 per cent. of 701 examined; Grainger Stewart in 31 per cent. of 407 examined. Others put the percentage still lower, but even this discrepancy is sufficient to show that something is the matter. Doubtless Millard is right in believing that Chateaubourg, who used Tanret's test in many of his examinations, mistook mucin or some other non-albuminous organic substance for albumin. As far as I know casts have not been looked for as carefully as albumin. The search for them demands a good deal of time if the sediment is scanty; and they may easily be overlooked when present if ample time is not allowed the urine to settle, and if skill in the selection of portions of the sediment is not exercised. Experience has led me to be skeptical when the statement is made to me that a distinct trace of albumin is present, but that casts as well as other formed elements, such as blood and pus, are absent. In such cases I have repeatedly found that more careful examination revealed the casts.

These bodies still enjoy a worse reputation in the minds of the laity than albumin, as well as in the minds of the profession in general. Patients are alarmed by the knowledge that there are casts in their urine, much as they used to be by hearing that they had a murmur in their hearts.

For five or six years now I have been more and more particular to have a thorough examination of the urines of patients seeking my advice made by competent men, quite irrespective of the nature of the complaint which brought the patient. The frequency with which albumin and casts, chiefly hyaline and finely granular of small diameter, was reported in

¹ Paper read at the Ninth Annual Meeting of the Association of American Physicians, Washington, D. C., Thursday, May 31, 1894.

⁴⁸ Daulton, Coll. & Clin. Rec., 1890, xi, 11.

² Philadelphia Medical News, May 5, 1894.

³ Medical Record, November 11, 1893.

those at or beyond middle life entirely apart from any other evidence of renal mischief, attracted my attention. This led to the preservation of the reports of those of fifty years of age or more, and more recently also of the younger patients. Consequently I deal with larger figures relatively or absolutely at the later ages. I now regret that I did not begin my collection on a more comprehensive basis. All the same, it does not seem probable that the result would be very materially modified. In the decade of twenty to thirty I believe that a larger number of cases would reduce the percentage of those with renal albuminuria, and I think also that larger figures would show the condition to be quite as frequent between eighty and ninety as between seventy and eighty; but I cannot regard these sources of error as serious.

In the collection of these cases I have excluded all those with fever; all in which such well-known renal irritants as bile and sugar were present, no matter how small in amount; and also those in which examination rendered it probable that the mechanical effect of crystalline formation in the kidneys was directly responsible for the albumin and casts.

In the division of cases reported as showing albumin and no casts, no cases are included in which there was sufficient blood or pus, either from the vagina or lower urinary passages, to account for the reaction. In many of these I am convinced that more careful search would have revealed casts. Cases of cardiac and other organic disease are included, but I have tried to omit all those in which passive congestion could account for the findings. Of course, all cases of unquestioned Bright's disease are excluded. In short, the attempt has been made to determine approximately how frequently renal albuminuria and casts are encountered in the urine in the ordinary run of adults who consult a doctor, but present no evidence outside of the urine of primary or secondary renal disease. Some sixty of the patients were hospital cases, partly medical, partly surgical, suffering from widely varying maladies or injuries. No record has been kept as to the time at which the urines of my cases were voided. The larger number probably were passed on rising in the morning; many were passed at mid-day in my office; some both morning and evening; not a few were mixed specimens of the twenty-four hours.

TABLE.

Age.	No. of Cases.	Albumin and Casts.	Albumin and no Casts.	No Albumin or Casts.
20-30	25	8, or 32%	3, or 12%	14, or 56%
30-40	39	9, or 23%	4, or 10%	26, or 66%
40-50	47	26, or 55%	3, or 6%	18, or 38%
50-60	99	64, or 65%	11, or 11%	24, or 24%
60-70	57	42, or 74%	5, or 9%	10, or 17%
70-80	16	16, or 100%	00	00
80-90	14	11, or 79%	00	3, or 21%

The personal equation can be eliminated from my results for the reason that the examination was made in, roughly speaking, nearly equal proportion by four different observers, and a few by two others, all competent to distinguish mucous from renal casts. The small percentage of cases in which albumin was found without casts shows, I think, that no serious suspicion

can attach to my results on the ground that other substances were often mistaken for albumin. In the great majority of cases but a single examination was made, but in a fair number there were two or more.

The table needs little explanation. It shows that the percentage of urines containing albumin and casts rises steadily with each decade from the fourth to the eighth, while those free from albumin and casts are in steadily decreasing percentage, and the proportion of those containing albumin but no casts remains nearly the same throughout. The number of cases in which casts were found without albumin was so small that these have not been classified.

The question remains as to the significance of these results. The pathological meaning is not easy of absolute proof. The class of patients who form the basis of my statistics are slow to die, and office and hospital patients are easily lost sight of. A considerable number of the patients I know to be alive, and apparently as well as when albumin and casts were discovered a number of years ago. In only two have I notes of autopsies. In one patient of eighty-five death was the result mainly of old age, and the kidneys were exceptionally healthy to the naked eye. In another of eighty-six years death was due to sudden uræmia supervening on prostatic enlargement necessitating repeated catheterization, cystitis, and impacted calculus at the vesical end of the left ureter; the kidneys were cystic and atrophic, especially in the cortices. Albumin and casts were found four years before death, and yet the general health was remarkably good for a person of upwards of eighty. In some of the cases albumin and casts were undoubtedly due to active hyperæmia or to irritation of the kidneys, and was perhaps transitory; but it is my belief that the facts in my table are best explained on the theory that the albumin and casts are the expression of senile renal atrophy, especially as far as the higher decades go.

There is no internal organ in which it lies in our power to detect so unerringly minute and slight changes as in the kidney. The heart, lungs, and blood-vessels as a whole are far less accessible to our examination. Age is not a matter of years, nor do we grow old symmetrically. I see no other reasonable explanation for the progressive increase in the frequency of albumin and casts as age advances. Whether this pathological doctrine be true or not the clinical significance admits, to my mind at least, of no doubtful interpretation. My anxiety is not awakened either for the present or the future by the report that a faint trace of albumin and hyaline and finely granular casts of small diameter are found in the urine of a patient after the age of fifty, provided that the kidneys are doing sufficient work as is shown by the twenty-four-hour excretion of solids, and provided that there are no symptoms.

Three years ago I was consulted by two brothers, fifty-two and fifty-five years of age, who had been urgently solicited to take out life insurance policies for one hundred thousand dollars each. But the ardor of the company was cooled when it was found that their urines contained a slight trace of albumin and casts, and their anxieties were awakened. Albumin and casts were constantly found in several examinations during the succeeding year; but the men were and remain perfectly well. The urines were rather concentrated. In patients under fifty albumin and

casts do not disturb me anything like as much as they did formerly. The important practical point is that they are not necessarily the precursors of serious kidney disease, and that their presence does not inevitably demand very careful regulation of the life and constant medical supervision.

In a certain proportion of cases, how large this proportion may be it will take years to determine, interstitial changes will reach a degree to shorten life, advancing more or less rapidly. It is not in our power at present to distinguish accurately which these cases are. Some help is afforded by the close estimation of solids in the twenty-four-hour urine; but in the average individual the reserve balance of kidney power is sufficient to permit of extensive renal impairment without curtailment of the ordinary daily work. The reserve may be diminished or gone; but if the reserve is not drawn upon too much or at all no apparent stringency is felt. We can grant that renal albuminuria is always pathological. Chronic pharyngitis is also pathological. It may be heresy, but I cannot resist the feeling that we are coming to believe that the clinical significance of the one is not necessarily greater than that of the other. I shall follow up my cases as far as I can and hope to be able in the course of years to throw further light on this important practical question. Life insurance companies are right in refusing risks reported as presenting albumin and casts. Life insurance is more like the French than the English criminal law; — it holds that innocence must be proved beyond reasonable doubt. But I have no doubt that risks are daily accepted by the best companies where an expert examination would detect albumin and casts. Few examiners apply the heat and nitric acid tests in a manner to try their full delicacy, and a microscopical examination is practically not demanded. Even if it were it would not ordinarily be sufficiently careful to be of much value.

Finally, my results may be summed up in the following conclusions:

(1) Renal albuminuria, as proved by the presence of both albumin and casts, is much more common in adults quite apart from Bright's disease or any obvious source of renal irritation than is generally supposed.

(2) The frequency increases steadily and progressively with advancing age.

(3) This increase with age suggests the explanation that the albuminuria is often an indication of senile degeneration.

(4) Though it cannot be regarded as yet as absolutely proved, it is highly probable that faint traces of albumin and hyaline and finely granular casts of small diameter are often, especially in those past fifty years of age, of little or no practical importance.

PELVIC INFLAMMATIONS.¹

BY LEONARD WHEELER, M.D., WORCESTER, MASS.

THE subject of Pelvic Inflammation is one of great importance to every practitioner; for the condition is very common, and, for two reasons beyond inherent difficulties, it is not easy to diagnose. These two reasons for the difficulty in diagnosis are, first, that in its present aspect the subject is so novel that only the younger men among us learned anything of it in the

medical school; second, that any degree of expertness in diagnosis requires the handling of a good many cases.

The pathological history of pelvic inflammations has been long and varied, but the salient points are interesting, and may be made very brief. Up to 1850 there was nothing extraordinary. Correct post-mortem observations had been made and recorded. Forty years ago, however, Nouat in France, followed by West and Simpson in Great Britain, and they again by Emmet in this country (of course, there are other names in plenty, but these were leaders), placed the seat of all these pelvic indurations and suppurations in the cellular tissue of the pelvis. It is wrong to say that these men based their ideas unduly on what they were able to feel during life, on clinical appearances and signs rather than the revelations of the post-mortem table. Autopsies do give strong credence to this view. It is only abdominal surgery, after all, that has proved it false. Where the pelvic inflammation has gone on to a fatal result, this cellular tissue has become extensively involved, and it is quite impossible to determine the point of origin of the disease. The suppurative process gets into this cellular area and follows it along, just as Schlesinger's air and liquid glue followed it between the folds of the broad ligament, along the psoas muscles, inward around the cervix, outward to the inguinal ring and downward between vagina and rectum. Having felt the disease during life and in its earlier stages apparently in the broad ligament, and after death finding a vast suppuration involving this very cellular area, it was natural enough to conclude that the disease had been all the time an affection of the cellular tissue, and that the diseased tubes always found with it were secondary. All this time, however, the opposite and correct view was stoutly maintained by Aran and his followers. He insisted that the masses felt during life were the same as those found so often after death from other causes as well as this pelvic inflammation, namely, diseased Fallopian tubes.

In 1857 appeared the first account of Bernutz's remarkable researches on the nature and pathology of pelvic inflammations. He clearly described the disease clinically; and he showed pathologically that it was a disease of the tubes and ovaries accompanied by peritonitis, and that cellulitis had no influence in causing the symptoms, that, in fact, it rarely existed at all as a primary disease except as a phlegmon in puerperal cases. This is the accepted doctrine of to day, in the past few years made plain by hundreds of operations for the radical cure of that large class of cases until recently regarded and treated as chronic cellulitis.

Notwithstanding this thorough work and its thorough discussion for years, the opposite theory still had its supporters, and would have had to the present day but for the revelation of Tait's operation, so-called.

In 1872 Battey did his first oöphorectomy, and the discussion and operations following prepared men's minds for the favorable reception of Tait's operation. Tait may have done some operations before, but the table in his book "Diseases of Women" begins with 1880. The operation for removal of diseased appendages was not done in this country until 1882. In 1883 it began to be much talked about, and has been ever since. The more it was discussed, the more attention was diverted from cellular tissue and fastened upon Fallopian tubes, though men were slow of conversion. Emmet held his ground firmly until 1888 or 1889.

It seems strange that so common and so grave a dis-

¹ Read before the Worcester Society for Medical Improvement, April 4, 1894.

ease as salpingitis should have been neglected for so long a time, especially after it had been so well described as it was by Bernutz. Still there would probably have been no further advance in these times except that Lister's grand discovery and proof of the value of cleanliness in surgery had made modern abdominal work possible. Except for this the pioneer work of Battey, Hegar, and Tait would have been quite likely to be dropped and forgotten.

With the advance in pathological knowledge and surgical treatment has come an eager study of the causes producing these inflammations, and all this attention has resulted in finding the disease of far more frequent occurrence than had been supposed. Gonorrhœa in the female has received a new meaning, and the necessity of surgical cleanliness in all gynecological and obstetrical work has received a capital emphasis.

In 1875 Noeggerath first published in this country his ideas in regard to latent gonorrhœa, which have given rise to a vast amount of discussion. It was a saying of Ricord that in the great conflagration of the final judgment the last thing to be consumed would be a drop of gleet. Noeggerath's ideas were in the same line. He maintained that any stricture after a gonorrhœa supplied a secretion capable of infecting the female, and that the favorite chronic abiding place of this inflammation in the female was in the tubes. His views have not been proved, but they went far in bringing about the modern idea of gonorrhœal disease in women. It used until quite recently to be considered a trivial disease. But with the present better knowledge of tubal pathology it becomes plain that it may be a very serious and dangerous disease.

It seems to be proved that some, perhaps many, deaths ascribed to puerperal fever are really cases of ruptured gonorrhœal pyosalpinx.

Another and probably more important cause than even gonorrhœa is the septic inflammation that extends over the genital mucous membranes after an unclean confinement, or especially abortion, or after the use of unclean instruments obstetrically or gynecologically.

There are other causes like syphilis, tuberculosis, exanthematic fevers, tubal pregnancy; but the important truth is that pelvic cellulitis, as it used to be understood, practically does not exist. The hard vaginal vault, the pre-uterine masses, the lumps by the side of or behind the uterus, the thickenings, the indurations, the areas of fulness with which we are so familiar, all these come from diseased tubes and consist either of swollen and adherent tubes and ovaries, or of peritoneal adhesions, or cicatricial bands. Other masses, of course, are often enough felt in the pelvis, but practically all the cases which used to be considered cellulitis are of this sort, and they are caused by an extension of inflammation from the uterine mucous membranes into the tubes.

Having in mind the bacterial nature of the disease its etiology may be expressed as follows: pus in the pelvis may owe its origin, first, to an inflammation of one sort or another (that is, may be owing to some form or another of germ growth) extending over the uterine mucous membrane into or through Fallopian tubes (gonococcus, etc.); second, to an inflammation extending through the parenchyma of the uterus via lymphatics or veins (streptococcus, etc.); third, to an inflammation derived from the intestine—the appendix, in one of my cases (*bacillus coli communis*).

In the great majority of cases it comes in the first way, via utero-tubal mucosa. It is a pyo-salpinx or the sequelæ of a pyo-salpinx. Those occurring in the second way, by an infection through the lymphatic or venous channel of the uterus, are of septic origin, starting from an abortion, confinement, or some surgical operation on the genital organs. The third sort is rare.

The prognosis and treatment of these cases of pelvic inflammation is a matter of much perplexity, and each case has to be decided on its own merits. One would think that a consultation of the authors writing just before the surgical treatment of the disease began, would give a definite idea of the prognosis of the disease. As a matter of fact, however, one finds merely vague statements of personal impressions, the general idea being that pelvic inflammation, except in puerperal cases, is not often fatal but is apt to entail a vast amount of distressing sequelæ. Wherever figures are used, however, the mortality becomes more conspicuous, as in McClintock's twenty-four cases with seven deaths.

The comparison is often made between salpingitis and appendicitis, but the two cases are only distantly similar. The appendix is a useless organ, and it is an advantage to be rid of even a healthy one, whereas there is no more important organ, except those necessary to life, than the Fallopian tube. Again, the diseased tube more frequently drains successfully into the uterus than the appendix into the cæcum. The universal surgical treatment of appendicitis may be maintained with some show of reason. Not so with salpingitis. Men make very definite statements as to certain conditions of the tubes entailing sterility, but it is a matter of much difficulty to determine what tubes are hopelessly diseased. I have seen a chronic pelvic inflammation, many months in duration, where the pelvis from side to side was of wooden hardness, in a woman who afterwards bore several children. Diseased appendages are not to be indiscriminately removed.

The cases to be operated upon are those where there is a recurrence of disease arising from a permanent focus of disease; second, those where there is a permanently palpable enlargement of the tube causing symptoms which wear upon the health; third, a few acute cases which have to be treated simply as abscesses.

As an illustration of my subject I have briefly reported the following ten cases, all but one of which occurred in my last year's service at Memorial Hospital. Four recovered without operation, two after the removal of the appendages, one after vaginal drainage, one died of peritonitis after operation, and one (a puerperal case) of peritonitis without operation.

CASE I. D. W., admitted October 28, 1892. Thirty-eight years old; widow; three children, youngest thirteen years. History of salpingitis one year before entrance. Recurrent attack two weeks before entrance. Whole pelvis found filled with hard irregular, sensitive mass, in which no organs could be made out. In three months this had gradually disappeared until there was nothing abnormal beyond slight lateral thickenings with backward displacement of the uterus. Patient was feeling well and having no pain even at time of menstruation.

CASE II. E. D., thirty-six years old, married. Admitted to Memorial Hospital November 24, 1892.

No children. Abortion four months before admission, followed by pelvic inflammation. Probable abortion five weeks before admission, followed again by pelvic inflammation. On admission there was a hard, tender mass extending from the retroflexed uterus to left pelvic wall. Under treatment this mass slowly disappeared, leaving an adherent retroflexed uterus; and patient had pretty well recovered her health in ten weeks.

CASE III. J. S., twenty-two years old, single. Admitted to Memorial Hospital February 16, 1893, with appendicitis. Abscess opened and drained (pus two ounces) February 17th. Limits of abscess cavity could be touched by finger in all directions except toward pelvis. This wound was completely closed by March 23d. Two weeks before this a purulent vaginal discharge led to the discovery of a double salpingitis, which gradually disappeared under treatment in the course of two months, leaving nothing palpably wrong in the pelvis except a retroflexion with adhesions.

CASE IV. J. McS., twenty-two years, single. Admitted to Memorial Hospital January 10, 1893. Confined with first child in Canada two weeks before entrance. Placenta adherent and removed. Chill on seventh day with abdominal pain and tenderness, vomiting and diarrhoea. Acute symptoms abated; but patient lost flesh, color and appetite, and complained of nearly constant pain up to time of entrance. Examined at this time, pulse was 95, temperature 101°. Abdomen somewhat distended and tender. P. V. uterus crowded backward and to the right by a hard, tender, immovable mass, filling left side of pelvis and extending above pelvis brim. After six weeks in the hospital, the mass had entirely disappeared, and the uterus was normally movable.

CASE V. L. R., twenty-one years, single. Admitted to Memorial Hospital January 20, 1893. A thin, pale, nervous girl. Gives history of invalidism, amenorrhoea, polyuria, etc., for four years. Has had local treatment. On left of uterus is a pear-shaped mass, twice as large as uterus, closely juxtaposed but not adherent to that organ. The diagnosis was solid tumor of ovary. The abdomen was opened February 15th. The tumor proved to be a huge pyosalpinx larger than the fist, with a few light adhesions to floor of pelvis and one very firm attachment at utero-vaginal junction, where the pus was apparently creeping toward the vagina. The breaking of this adhesion allowed a single drop of pus to escape. The tumor was easily tied off and removed. The right tube was found enlarged into half the size of this, and filled with pus. This was also removed. The recovery was uneventful. Discharged well March 14th.

CASE VI. B. W., twenty-five years, single. Entered Memorial Hospital November 22, 1893. Suffering from acute gonorrhoeal salpingitis (gonococci found in vaginal discharge). Pain was very severe, and patient altogether very sick. The acute symptoms passed away in the course of a few weeks, and she began to improve decidedly. The pelvic organs became less matted, and it was possible to distinguish the uterus with the swollen tubes on either side. At this point improvement ceased, pain became worse, and we decided to remove the tubes. This was done January 26th. The tubes were perhaps double the size of the thumb, and tensely filled with thin pus. As always in these cases, they were folded downward and back-

ward under the broad ligament. Adhesions were strong and universal. At first, it seemed impossible to find any place of cleavage. By patient scratching they were dug out, tied off without the loss of any pus. Was allowed to sit up in two weeks. Discharged well March 2d.

CASE VII. J. E., twenty-five years, married. Entered Memorial Hospital March 2, 1893. Artificial abortion a year ago followed by severe hæmorrhage. Confined at term six weeks ago. Had chill and fever on second day, otherwise recovery was not interrupted. Yesterday, March 1st, was seized with severe pain in pelvis accompanied by nausea and vomiting. Entered hospital March 2d at 5 P. M., temperature 104.4°, pulse 120. No defecation for two days; no urine for thirty hours, 22 ounces drawn by catheter. Abdomen moderately distended and tender. Masses on both sides of uterus felt by vagina. Uterus much enlarged. Free catharsis caused improvement in symptoms. Patient was so severely sick that hesitation was felt about opening the abdomen, so an opening was made per vaginam, drawing off four ounces of pus, and a drainage-tube inserted. The cavity was washed out daily, discharging pus for two weeks. Patient slowly improved, and was discharged after six weeks in hospital feeling nearly well. Uterus was still too large; adherent to it on the left was a mass the size of an English walnut. The right adnexa were naturally soft.

CASE VIII. N. M., thirty-one years, married. Entered Memorial Hospital March 12, 1893. Patient had a history which led to a probable diagnosis of tubercular peritonitis. Laparotomy was done. No tubercles found, but the whole pelvis was found occupied by what appeared to be a soft, solid mass, easily bleeding, in which pelvic organs, omentum and intestines were hopelessly involved. The next day began a discharge of pus from the rectum, which continued several days and was estimated at about a pint in amount. She improved rapidly; the pelvic mass melted down to an insignificant thickening; and she was discharged well on April 16th.

CASE IX. M. C., twenty-eight years, married. Entered Memorial Hospital February 14, 1893. Married at eighteen; child one year later. Three years ago had inflammation of the bowels. In bed four weeks. Unable to do full work for a year, and has been subject to pelvic pain since. December period copious, followed by recurrence of inflammation. In bed since. January, flow scanty, and followed by purulent vaginal discharge, which has continued since. Patient is thin, pale, with little appetite, small pulse, temperature nearly normal. Hard mass felt by palpation above pubes. Uterus in nearly normal position, partially embedded in hard mass on right, which extends from pelvic wall to beyond median line. Mass is hard, immovable, not sensitive. Orifice of sinus from which the pus comes, felt behind cervix to right. It was found impossible to follow this sinus for the purpose of dilatation. It was thought better to attack the trouble through the abdominal wall.

At the operation on March 28th, the right tube was found divided into two distinct four-ounce cavities filled with pus, extending from the side of the uterus to the cæcum and universally adherent. Omentum could not be separated, and was tied off. When the tube was nearly enucleated, it burst and covered the field of operation with pus. This was washed out with hot water, the enucleation completed, and the tumor tied off. There

was no difficulty of separation at the point of the fistulous opening into the vagina. Left tube healthy. Large gauze drain was left in. Patient died of peritonitis at the end of the third day.

CASE X. R. E., forty years, married. Admitted to Memorial Hospital March 15, 1893. First child born three weeks before entrance. Confinement normal. Was up feeling quite well on the eighth day, March 10th. Five days before entrance, eighteen days after confinement, after exposure, wetting feet, etc., had a chill followed by fever, vomiting, abdominal pain and tenderness. On 13th, temperature 103°, pulse 130. On 15th, when she entered hospital, temperature 103°, pulse 100. Abdomen moderately distended and tender; countenance dull. Said she felt better than the day before. Nothing abnormal was felt by the vagina. A few hours later she grew rapidly worse. At evening, temperature was 105°, pulse 170; and she died at 4 A. M., March 16th. Autopsy five or six hours after death. Body warm. Rigor mortis not present. When abdominal cavity was opened, a sero-purulent fluid escaped. The amount of this fluid in abdominal cavity estimated at from six to eight ounces. Peritoneum everywhere covered with lymph flakes. Intestinal coils just beginning to adhere one to another. Signs of peritonitis as much marked in upper part of abdomen as lower. Vermiform appendix and gall-bladder normal. Uterus possibly a trifle subinvolved. Site of placenta evident upon posterior part of fundus. Fallopian tubes and broad ligament free from adhesions. Broad ligament not thickened. Cause of the general peritonitis not determined by the post-mortem appearances.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

NINTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

FIRST DAY.—TUESDAY.

PRESIDENT REGINALD H. FITZ, of Boston, called the Association to order, and delivered an address on the

RISE AND FALL OF THE LICENSED PHYSICIAN IN MASSACHUSETTS, 1781-1860.¹

DR. BEVERLY ROBINSON, of New York, read a paper on

THE TREATMENT OF CERTAIN SYMPTOMS OF GROUP-PNEUMONIA, PARTICULARLY IN ADULTS.

The treatment of pyrexia and pulmonary congestion, he said, are of special interest in the first stage. The modern antipyretic drugs are not ordinarily useful, although good, occasionally. Phenacetine is the most satisfactory. More reliance is placed upon the use of spirits of Mindererus, citrate of potash and sulphate of magnesia to reduce temperature by action on the skin, kidneys and bowels. Three to five grains of quinine every four to six hours tends to diminish fever while strengthening somewhat the heart. Cold sponging, the ice coil, cold pack or cool bath for the purpose of reducing temperature do not act with any special efficacy as usually employed. Occasionally, when the

temperature is beyond 104° and there are evidences of adynamia, the tub-bath at 80° to 90° F. may be usefully employed, combined with continuous friction.

Aconite or aconitin may often be injurious by diminishing the energy of cardiac contraction. Even when combined in its use with digitalin, or digitalin and strychnine, it is not free at times from grave objections. There are other drugs eminently more useful, both theoretically and practically. In this stage of pneumonia no drug acts as well as antimony in small repeated doses. Kermes mineral, or the oxysulphuret of antimony, is the best form. It is given usually in doses of $\frac{1}{2}$ of a grain every two hours, or every hour for a while, in a mixture with syrup of gum and orange-flower water. Employed in this manner, fever and pulmonary congestion diminish at times in a very obvious manner. Expectoration becomes easier and more abundant, and the sputa from being very tenacious and viscid are more fluid and brought up with relative ease and increased frequency. Kermes mineral given in this way is not irritating to the digestive tract as tartar emetic often is, and does not produce a collapsed condition. It suits children, also, remarkably well. To aid its advantageous effect, we should employ at times alcohol internally, and revulsives to the chest wall. The great mistake formerly made in the use of antimony was the employment of the wrong salt and its use in excessive doses.

When the heart is particularly taxed by reason of pulmonary congestion and a tendency to cedema, no drug produces the rapid and remarkable results of nitroglycerin given by the mouth, or better still, hypodermically. We must not rigidly adhere to the ordinary dose of $\frac{1}{100}$ grain, but should use $\frac{1}{60}$ or $\frac{1}{30}$ if the condition of the patient is imminently threatening.

The use of inhalations of oxygen in relieving pulmonary congestion affords marked temporary relief to breathing in the greater number of cases of pneumonia; but, in a few instances, not even relief is afforded, but the dyspnoea, and subjective distress is obviously increased. These differences of action cannot always be accounted for.

It is essential to have pneumonia patients drink abundantly of water, and not force them simply to take milk, beef-tea, or broths of different kinds, with the idea that all that is required is to give nutritious fluids, losing sight of the great importance of water given by the stomach to promote the elimination of poisonous excreta through the skin and kidneys. The abundant use of cold spring-water or soda-water gives relief to thirst and helps reduce the fever, and may diminish slightly the viscosity of the expectoration.

The proper use of alcohol in the treatment of pneumonia is a difficult problem. Unquestionably, in many instances it is very beneficial. It is generally judicious practice when any reasonable doubt prevails as to the condition of the patient with respect to any one of the numerous conditions which seem threatening to life, to give moderate and repeated doses of alcohol. There are two absolute contra-indications: first, cases in which the patient is highly plethoric; second, cases in which the hepatic engorgement and gastric catarrh render it pernicious because nausea and stomachal intolerance are increased by its exhibition even in moderate amount, and assimilation of food and water is prevented.

The use of calomel in small repeated doses often has marked beneficial effect in cases where the tongue

¹ See page 529 of the Journal.

remains yellow and thickly coated with fur, while the breath is offensive. An engorged and sometimes tender liver, a hard and distended abdomen, are frequently dissipated by this medication.

The two dangers most to be feared in the state of hepatization as well as that of crisis, come from heart-failure or pulmonary hyperæmia. How are these conditions to be met? The author's convictions are opposed to the use of digitalis or digitalin, except in very small doses, and then only to control cardiac irregularity when it occurs. The pulse is sometimes lowered in a sudden and alarming manner from this drug. The author employs in these conditions, large doses of strychnia, at first by the mouth, and later, whenever there is evidence of heart-failure coming on, by the hypodermic method. Results of considerable value have been obtained by the use of hypodermic injections of extract of coco, made up aseptically. Reliance must also be placed in these cases upon the use of nitroglycerin hypodermically. Bleeding, alone, saves certain cases. After venesection, the use of the drugs mentioned is more valuable. In reflecting upon some cases in which general pneumonic congestion at first seemed to be the immediate cause of death, the author has concluded that a slowly forming ante-mortem heart-clot had much to do with the fatal termination. Frequently repeated doses of strong black coffee is often beneficial. Black coffee and alcohol, particularly old brandy or rum, will be assimilated and hold the vitality of the patient when other food or stimulant will be of little or no apparent benefit. Caffein does not replace the use of coffee.

In the treatment followed at St. Luke's Hospital, New York, half-milligramme doses of arseniate of strychnine are usually given together with digitalin and aconitin. The author has for some time watched this method of treatment, and prefers the treatment outlined in his paper to the one with the so-called "trinity pill."

DR. G. L. PEABODY, of New York, said that he was in accord with Dr. Robinson, that at the present time there was no possibility of any other treatment of pneumonia than the symptomatic. One combination of symptoms which is very distressing and which needs treatment, had not been given by Dr. Robinson, namely, pain together with insomnia. Frequently doctors object to the administration of morphine in pneumonia, even in the minute doses in the cough mixtures, on the ground that opium and its alkaloids impair the activity of the respiratory centres; and as here the respiratory system is at fault or impaired, it is undesirable to do anything that would still further impair it. This reasoning is very fallacious, for it is not the respiratory centre that is impaired, but the respiratory periphery; and small doses of morphia do not further impair the respiratory system of the thorax but will often act as a cardiac stimulant and aid matters in the chest. Small doses of morphia, one-sixth of a grain, repeated once or twice if necessary, during the course of the night, will relieve the symptom of pain, or insomnia dependent upon pain or excessive cough, in a way that nothing else will.

It is not necessary to treat every case of pneumonia whose temperature reaches 103° by any form of bath; but if the temperature is particularly high or prostrating, then the bath is exceedingly valuable, in conjunction with friction to the surface.

Dr. Robinson's experience as to the occurrence of

heart-clot as a cause of death in pneumonia was at a variance with that of Dr. Peabody. In many autopsies in deaths from pneumonia, he had very rarely found heart-clot present. He thought that the French authors particularly have been inclined to mistake a post-mortem for an ante-mortem heart-clot. They have relied for a differential diagnosis upon the imprint of the aortic valve upon the clot, which is fallacious. The heart-clot is so infrequent that it is not possible to predict it or to avert it by treatment.

DR. J. C. WILSON, of Philadelphia, said, in croupous pneumonia we have to deal with a pathological condition associated with certain clinical phenomena which vary within the widest limits, so that the croupous pneumonias of infancy, of early life, of adult life and of old age; the croupous pneumonias of alcoholic subjects; the croupous pneumonias which are secondary to antecedent infectious processes; the croupous pneumonias in which there are corresponding or equally varying local lesions; central pneumonias, apex pneumonias, crossed and double pneumonias, and so on, give us a series of clinical pictures which present not only wide variations in symptoms, but indicate an equally varying treatment. So that the treatment of pneumonia to-day, while we have no specific treatment to fall back upon, must be, in the first place, a treatment of expectancy, and, in the second place, a treatment in which the symptomatic factor must enter largely in the process.

The experience with cold baths in the German Hospital in Philadelphia has not been satisfactory in the treatment of any form of pneumonia. The cases have not done well that have been immersed in the cold bath. The application of cold locally to the chest has at times seemed to be of decided benefit.

Regarding venesection, it would appear from the literature of the subject that too much attention is paid to the mechanical indications for venesection. Venesection in croupous pneumonia has often proved advantageous, doubtless by relieving the toxæmia by withdrawing from the blood-supply in large volume the toxic principles to which the nervous symptoms and other serious symptoms must be due. Venesection is therefore useful in cases where the old mechanical indications are not very well marked.

Regarding the use of opium, it is not only safe but often advantageous, in a large proportion of cases of pneumonia, to give small amounts of morphia. Small doses of Dover's powder, two, two and one-half or three grains, at intervals of two, three or four hours, according to the degree of pain or restlessness of the patient, may be given throughout the case.

DR. V. C. VAUGHAN, of Ann Arbor, believed that Dr. Robinson had not used the true digitalin, but a so-called digitalin the greater part of which is digitoxin. The true digitalin, which has been studied by Pfaff, has a wholly different action from that described by Dr. Robinson.

DR. B. ROBINSON said that he had purposed in his paper to oppose what seemingly is the conviction of some eminent practitioners in New York of the efficacy of the so-called "trinity pill," or a modification of it, in the treatment of certain threatening symptoms of pneumonia.

He also wished to direct attention to the fact that we are using drugs very often in a way that is not altogether rational, simply because we do not know what we are using. Different doctors, using what

they suppose to be the same drug, secure different results, which are due to the fact that the agents they use are not the same.

DR. J. W. ROOSEVELT, of New York, stated that the "trinity pill" was not used in all the cases at the Roosevelt Hospital. It had been used in about one-third of the cases during the past year.

DR. S. A. FISK, of Denver, read a paper on

A TREATMENT OF TYPHOID FEVER.

Dr. Fisk exhibited a chart on which his article was based. It was compiled from thirty average cases of typhoid under his treatment, running through three years. The chart is a composite of these cases. The morning temperature for any one day of all the cases are added together and divided by thirty, and a mean temperature is thus obtained. The same way with the evening temperature; so that the chart as presented is a composite of the thirty cases, both with reference to the temperature and the pulse-rate.

The cases were mostly hospital cases, and were obtained, as most hospital cases are, about the fourth or fifth day. They were cases of undoubted typhoid, not selected, having the usual symptoms, including rose spots, and treated almost by routine according to the method outlined.

The chart shows a steady decline in both temperature and pulse-rate from the very beginning and a short duration. Together with this chart was exhibited a typical chart of typhoid fever taken from Pepper.

The treatment is: Calomel, five grains, at the very start, followed by a saline; a tumbler of milk, peptonized if necessary, every three hours, followed in twenty minutes by four minims of the oil of turpentine, four minims of castor oil, ten grains of the subnitrate of bismuth and a drachm of mucilage of acacia. This has the effect of constipating the bowels, so that every second morning anywhere from two teaspoonfuls to a tablespoonful of castor oil is given, the patient usually feeling better on the days on which he takes the oil. Plenty of water, which can be iced if they prefer; lemonade, not to conflict with the milk, if they choose. Delirium of the early stage is quieted with Dover's powder, five grains, repeated once or twice p. r. n. at night. But little attention is paid to high temperature; occasionally the patient is sponged a few times, if the temperature runs very high. Dr. Fisk believes with Dr. Steadman, in the city hospital reports of Boston, that the pulse is a better indicator of prognosis than the temperature. After the temperature has remained normal, or in many cases subnormal, a week or ten days, he begins to feed gradually, preferring animal diet, in the way of broths, eggs and the juice of beef, to starchy foods. If the pulse becomes feeble, he stimulates with whiskey, one-half ounce every two or three hours p. r. n., and uses digitalis or strophanthus, rather preferring the latter.

DR. I. E. ATKINSON, of Baltimore, agreed with Dr. Fisk that milk was the proper diet of typhoid fever patients, but with some qualifications. He had a number of times seen patients whose death was doubtless due to the efforts made in attempting to expel the undigested portion of the casein of the milk which had accumulated in the rectum. He thought that the judicious mingling of liquid animal food with the milk toward the end of treatment of typhoid fever was useful and desirable in nearly all cases.

Insomnia in typhoid, especially that insomnia which

may be called the coma vigil, is extremely ominous. In a number of cases Dr. Atkinson had averted fatal consequences by abandoning the use of ordinary hypnotics and using a slight inhalation of chloroform. In cases where the patient has taken the ordinary hypnotics to the danger point, a few whiffs of chloroform has allowed the patient to go into a slumber and permitted the other hypnotics to assert themselves.

It has been well established that all the symptoms of typhoid are favorably modified by the use of the cold bath. The dry, brown tongue is not present; there is absence of tympanites, subaustus, of delirium and of profound depression, all due to the use of the cold bath, even where the temperature is only temporarily modified.

The efficacy of the line of treatment which Dr. Fisk points out is not shown quite clearly by the chart. One or two cases widely different from the rule would have given quite a different picture. It is not shown that his method is as good as the cold-bath treatment now in vogue.

DR. C. F. FOLSOM, of Boston, thought that Dr. Fisk had had the luck to have treated 80 unusually mild cases. Since Dr. Folsom has been a visiting physician at the Boston City Hospital, probably 1,500 to 2,000 cases of typhoid have been treated; and of these, 300 to 400 were under his care. After he had treated 150 cases, he had been rash enough to write a paper and to generalize from these cases on the treatment of typhoid fever. Now, when he needs a little humiliation he refers to that paper. The number of Dr. Fisk's cases is altogether too small to generalize upon. Medicine, strictly speaking, has very little effect in typhoid, excepting in controlling symptoms which cannot be better controlled in other ways, and those are very few. Almost all the symptoms are best treated with cold water.

DR. J. F. A. ADAMS, of Pittsfield, Mass., expressed his appreciation of the composite charts presented by Dr. Fisk, and thought it would be well for others to follow the same plan. He referred to the fact that typhoid fever in different parts of the country, and at different times in the same locality, is almost an entirely different disease. In Western Massachusetts, about ten years ago, there had been an invasion of intermittent fever, and following this invasion typhoid fever became greatly changed, and instead of following the typical chart of Dr. Pepper, followed more nearly the chart of Dr. Fisk. The mortality was very much diminished; and every form of treatment that was used during the two or three years following the invasion of malaria, was highly successful, because of the mild and short form of typhoid fever.

DR. WM. OSLER, of Baltimore, said that the paper of Dr. Fisk illustrated a common therapeutic fallacy, as it was doubtful whether Dr. Fisk's treatment had any influence on the disease. The chart indicates that he had a peculiarly mild series of cases which would have doubtless recovered with diet and a nurse. For the year ending May 15th, Dr. Osler had treated in his wards at the Johns Hopkins Hospital, 80 cases by the Brand method with a mortality of only just over six per cent., which is a very satisfactory showing for a general hospital to which the cases are brought at all stages.

DR. S. A. FISK said that the criticisms upon his paper were as he expected. While the treatment he outlined was not a specific, yet it had been employed

satisfactorily in Denver for many years, where there has been much typhoid fever. In the fall of 1890, there were 700 cases of typhoid in Denver during the month of October. He believed that there were other methods of treating typhoid fever than by cold baths.

DR. C. F. FOLSOM, of Boston, read a paper on

CASES OF TRAUMATIC HEADACHE.²

Six cases were reported of injury to the head from severe blows, in five of which there were irregular, ragged cicatrices from healing by granulation. In two trephining was done. In the others the cicatricial tissue was excised. The pathological conditions found by Dr. W. F. Whitney were interstitial neuritis, thickened pericranium, increased cell proliferation causing pressure, and, in one case, diffuse hyperostosis of the skull. The symptoms—pain, various morbid nervous and mental indications and petit mal—were relieved. In two cases, there was also an ocular defect as a partial and contributing cause of the trouble.

DR. M. ALLEN STARR, of New York, said that although such a severe operation as trephining was a rather serious matter to recommend for headache, yet there are some cases, such as those related by Dr. Folsom, in which it should be used as a last resort. He related a case similar in many features to the cases of Dr. Folsom. A young man struck upon the head four years ago had suffered very intensely since that time from constant pain at the seat of injury, and his disposition had changed very much. From being a good-natured, fairly intelligent boy, he had become a perfect little devil. He had, at times, attacks of rage in which he would act in a maniacal manner. After all other measures had been tried in vain, Dr. McCosh trephined at the position of the pain, which coincided with the position of the cicatrix. A slight depression was found in the external table, but there was no fracture of the internal table and no adhesion of the dura to the bone. Under the dura was a small angioma, which was taken away. Punctures were made with a hypodermic needle in three directions under the wound, in search of a possible cyst beneath the cortex, but nothing was found. The patient made a good recovery. He has been entirely free from headaches; his disposition has become tractable; and he is in every way a new and better boy.

In a large experience with traumatic epilepsy and other cases of traumatism of the scalp, Dr. Starr has found pain at the seat of the injury the exception and not the rule.

An interesting observation in connection with this case was, that for six weeks subsequent to the operation the boy had an absolute loss of muscular sense in the right hand and arm below the elbow. There was no disturbance whatever, of motor power, no disturbance of touch, temperature or pain senses. It is perhaps the only case on record in which a cortical lesion has produced a loss of muscular sense alone, and settles a disputed question as to the existence of muscular sense as separated from motion and sensation.

DR. FREDERIC P. HENRY, of Philadelphia, read

A CLINICAL REPORT OF TWO CASES OF RAYNAUD'S DISEASE.

The author gave in detail the history of two interesting cases of Raynaud's disease, and exhibited colored sketches of the patients. He then discussed the distinc-

tion between genuine and spurious cases of Raynaud's disease, the genuine affection being distinguished by the stages of local "syncope" and "asphyxia," the absence of traumatism, and symmetrical distribution of lesions. The disease has nothing in common with senile gangrene.

The chief theories of the cause of Raynaud's disease are: (1) that it is due to an endarteritis obliterans; (2) that it is due to peripheral neuritis; (3) that it is the result of vascular spasm. The last is the theory of Raynaud himself, and, in the opinion of the author, is the one that is in accordance with the clinical phenomena. The disease is most prevalent in females and in the young, that is, in those whose vaso-motor system is most impressible. It occurs in paroxysms, which are caused by the surest exciter of vascular spasm—cold. Finally, in several cases, during the paroxysm, there has been dimness of vision, which was shown by the ophthalmoscope to depend upon a contraction of the central artery of the retina and its branches; and in one recently reported by Dr. H. M. Thomas, the attacks of local syncope were followed by a chill, loss of consciousness and convulsions. Such facts are in the highest degree corroborative of Raynaud's view that the disease is due to an "enormous exaggeration of the excito-motor energy of the gray parts of the spinal-cord which control the vaso-motor innervation."

The symptom hæmoglobinuria, occasionally observed, is best explained by the theory of vascular spasm, and is dependent upon an excretion of hæmoglobin which has been separated from the red corpuscles in the peripheral asphyxiated parts.

DR. HENRY M. LYMAN, of Chicago, thought that from the physiognomy of the pictures presented both of the patients were arthritic subjects. The relationship between arthritism and Raynaud's disease should be borne in mind. He had seen quite a number of cases in which that relationship was very evident.

DR. WM. OSLER said: Dr. Henry has referred to a case reported by Dr. H. M. Thomas from my clinic. It was very interesting in this respect, that the attacks occurred only during winter, were always associated with epilepsy, and usually associated with hæmoglobinuria. In connection with the cerebral manifestations of the disease, we have also had under observation a remarkable case in which with the local asphyxia, sometimes without, the patient has aphasia sometimes with and sometimes without hemiplegia.

DR. M. ALLEN STARR said that the disease could be entirely outgrown, and spoke of a case under his observation which had resulted in recovery.

DR. W. H. WELCH, of Baltimore, said that it was not at all clear to him how there could be a connection between hæmoglobinuria and arterial spasm. It is possible that the hæmoglobinuria in these cases belongs to the general type of paroxysmal hæmoglobinuria that follows exposure to cold. The experiments of Ehrlich and of Rosenach indicate that the red blood-corpuscles in this condition are unstable and readily, under the influence of cold, give up their hæmoglobin. It is probable that the corpuscles give up their hæmoglobin in those cases described by Dr. Henry from this cause, and that vascular spasm has nothing to do with it.

DR. F. P. HENRY believed that there was a greater vulnerability on the part of such patients to such causes as dissolve the red blood-corpuscles than on the

² To be published in full in the Journal.

part of other people; but it seemed to him also, that the arterial spasm, the effect of which is to produce local asphyxia, is also concerned in the production of the hæmoglobinæmia. The hæmoglobinuria is a result of the hæmoglobinæmia.

DR. H. C. ERNST, of Boston, then reported

DR. S. C. MARTIN'S RESEARCHES ON THE BACTERIA OF VACCINIA.¹

The paper presented was made up of the work of Dr. Stephen C. Martin upon Vaccine Virus, obtained from a complete set of notes left to Dr. Ernst by Dr. Martin before his death, which occurred last fall, and which he wrote out when he found that he would not be able to continue his work by reason of the illness, that finally proved fatal. Briefly stated, the results of Dr. Martin's investigations are as follows:

- (1) The germ of cow-pox is a bacterium.
- (2) This bacterium, in different stages of development, is in the form of a coccus or of a bacillus.
- (3) It can be isolated and grown in pure culture on blood serum at the temperature of the blood.
- (4) Inoculation on the calf from such cultures readily produces the typical cow-pox, while inoculations in man, have produced typical cow-pox but once in eleven times.

All that remains to be done now is to find under what conditions to grow the pure culture, that it may be uniformly relied upon for vaccination in man.

DR. W. H. WELCH thought that the results reported in this paper were very important, if true. Others have made observations in much the same way, with negative results. The work is left by Dr. Martin in that condition where it needs confirmation.

DR. A. C. ABBOT, of Philadelphia, thought the results obtained by Dr. Martin exceedingly interesting, but felt that subsequent observations might modify the results.

DR. G. M. STERNBERG said he would like to have these experiments repeated by an accomplished bacteriologist. There ought to be no difficulty in confirming the experiments if they were reliable.

DR. H. C. ERNST said that the work had been done in his laboratory, that he had carefully questioned Dr. Martin at different times, but could never detect any fallacy. His object in presenting the work to the Association was to secure confirmation or refutation.

(To be continued.)

ASSOCIATION OF AMERICAN ANATOMISTS.

THE Sixth Annual Meeting of the Association of American Anatomists was held in conjunction with the Congress of American Physicians and Surgeons in Washington, D. C., May 29 to June 1, 1894.

The Secretary reported that Dr. Chas. B. Ewing, Assistant Surgeon, U. S. A., and Dr. F. C. Schaefer, Professor of Anatomy in the Chicago Medical College, had resigned; and that three members had died, namely, Dr. Wm. Lee, Professor of Physiology, Columbian University, Washington; Dr. Wm. B. Towles, Professor of Anatomy and Materia Medica, University of Virginia, and of Anatomy, University of Vermont, and Dr. Corydon C. Ford, Professor of Anatomy and Physiology, University of Michigan.

The officers elected for the ensuing term were: Dr.

¹ To be published in full in the Journal.

Thos. Dwight, of Harvard University, President; Dr. B. G. Wilder, of Cornell University, 1st Vice-President; Dr. F. J. Shepherd, of McGill University, Montreal, 2d Vice-President; Dr. D. S. Lamb, Army Medical Museum, Washington, Secretary and Treasurer. Prof. C. L. Herrick, Denison College, Granville, O., delegate to the Congress of American Physicians and Surgeons; Dr. D. K. Shute, Columbian University of Washington, D. C., alternate. Dr. Theo. M. Gill, Smithsonian Institution, Washington, D. C., was elected to the vacancy in the Executive Committee.

The following new members were elected: Dr. John A. Boger, Assistant Demonstrator of Anatomy, University of Pennsylvania; Dr. H. B. Ferris, Assistant Professor of Anatomy, Yale University; Dr. Robert L. Greene, Professor of Anatomy, University Medical College and Western Dental College, Kansas City, Mo.; Dr. Wm. Keiller, Professor of Anatomy, University of Texas; Dr. Joseph Leidy, Assistant Demonstrator of Anatomy, University of Pennsylvania; Dr. Mary B. Moody, New Haven, Conn.; Mr. Robert O. Moody, Yale Medical School; Dr. Chas. D. Smith, Professor of Physiology, Bowdoin College; Dr. Wm. O. Stillman, Albany, N. Y.; Dr. W. C. Woodward, University of Georgetown, Washington, D. C. Sir Wm. Turner, of London, was elected an honorary member.

The following papers were read: "On the Identity of Structure of Protoplasm with that of Striped Muscle," by Dr. Carl Heitzmann, of New York City; "Some Problems Relating to Cerebral Fissures," Dr. Wilder, of Cornell University; "A Plea for a Methodically Written Text-Book on Anatomy," Dr. Edmond Souchon, Tulane University, New Orleans; "Study of the Human Cranium," also, "Shortening of the Face-Axis in the Evolution of the Mammalia," Dr. Harrison Allen, University of Pennsylvania; "Methods of Estimating the Height from Parts of the Skeleton," Dr. Dwight, Harvard University; "The Perineum and Perineal Body," Dr. Shute, of Columbian University, Washington, D. C.; "The Study of the Muscular Tunic of the Large and Small Intestine of Man in the Region of the Cæcum," also "A Note on the Occurrence of the Scapulo-Clavicular Muscle," Mr. Moody; "Theoretical Anatomy of the Sympathetic System," Dr. Wm. Carr, Columbian University, Washington; "The Female External Genital Organs, a Criticism on Current Anatomical Description," Dr. Lamb, Army Medical Museum, Washington, D. C.

The following papers were read by title in the absence of the authors: "In Our Two Years' Study of Anatomy, What Part of the Subject should be Covered in the First Year's Work, What Part in the Second?" by Dr. A. D. Bevan, Rush Medical College; two papers "The Form and Relations of the Nerve-Cells and Fibres in *Desmognathus Fusca*," and "The Terminology of the Nerve-Cell," by Prof. P. A. Fish, Cornell University.

A STRIKE CAUSED BY TOOTHACHE.—A dentist is attached to all the French lucifer match factories. At one of these all the hands went on strike recently, so it is said, because the dentist made them suffer so much. As their visits are compulsory at certain stated intervals, there was no escape except by the means adopted. The dentist resigned, and was replaced, and the hands returned to their work.

AMERICAN MEDICAL ASSOCIATION.

Forty-Fifth Annual Meeting, San Francisco, CAL., JUNE 5, 6, 7 AND 8, 1894.

FIRST DAY. — TUESDAY.

THE Forty-fifth Annual Meeting of the American Medical Association was held at San Francisco, June 5th. The general session of the opening day was attended by over two hundred members, and was held at Odd Fellows Hall, which was abundantly decorated with orange, scarlet and white festooning. The President, JAMES F. HIBBERD, of Richmond, Ind., called the meeting to order at 10.45 A. M. In the unavoidable absence of both the Governor and the Mayor, Supervisor J. C. James extended to the guests "the freedom of the city and a hearty and cordial welcome."

The formal Address of Welcome by the California State Medical Society was given by DR. J. L. DIMMONS, of Sacramento.

DR. H. R. PLUMMER, Chairman of the Committee of Arrangements, reported that the entire expenses of the meeting had been provided for without calling upon the funds of the Association. After announcing the official programme, he presented President Hibberd with a gavel made of orange-wood (representing the State color) and manzanita-wood. The sides were of gold, one inscribed "A.M.A., S.F., 1894," and the other "James F. Hibberd, President."

The chairman of the various sections were each presented with a gavel of yew and myrtle wood by the physicians of Oregon.

THE PRESIDENT'S ADDRESS.

After thanking the convention for its gift, PRESIDENT HIBBERD delivered the address.

He discussed the various points at which the Association comes into touch with the general medical needs and work of the country. He considered it of the greatest importance that a more satisfactory arrangement should be made of subordinate medical societies in their relation to the American Medical Association. At present many delegates are annually not received because their credentials are not issued by a society technically entitled to representation.

"Every medical man who belongs to any medical society should belong to a county or an equivalent medical society, and every member of a county society should be *ipso facto* a member of his State society, and this is an "open sesame" to the American Medical Association.

By this arrangement, all reputable physicians in the United States would be brought together in the common fold, whose power for good within its legitimate sphere would be limited only by its aggregate wit and energy. Such a consummation would elevate the American profession to a plane for useful work the highest conceivable for the disciples of scientific medicine.

This would in no wise interfere with the organization of medical men devoted to special lines of practice or investigation; indeed, the more of these, and the more special their fields of labor and inquiry, the more rapid will be the development of medical knowledge, the nearer will expert art approach to perfection, and the greater will be the blessing to humankind. In these special and limited societies there will be a concentration of thought and labor that will yield results

advanced and true to a degree beyond hope from a more promiscuous assembly.

All the adherents of the special organizations will be members of county societies, and thereby of their respective State societies, whence, for the asking, they can step through the portals of this Association, and find in our sections a department already organized and at work, into which they can enter, each according to his tastes or qualifications, and feel at home among fellow-laborers.

After discussing in detail the organization and functions of the various sections and committees of the Society, he devoted the remainder of his address to the more public duties and opportunities of the Society. A determined effort should be made by the whole Association to prevent the threatened mistake of reducing the number of assistant surgeons in the army, and to have Congress restore the appropriation for the National Medical Library to its original \$10,000. Reviewing the efforts to secure a National Bureau of Public Health, he said:

"Without rehearsing details, I feel free to declare my conviction that enough has been ascertained of the sentiment of the executive and legislative departments of the government to rob us of all hope of the establishment of a Department of Public Health within the remainder of the nineteenth century."

A bureau of public health, with a commissioner as its chief, within one of the existing departments of the government, was apparently within reach of a united, harmonious, aggressive effort of the profession for a year or two previous to the enlargement of the power of the Marine-Hospital Service by the last preceding Congress, but the excellent work of that service at home and abroad since its increase of authority and means has lessened the anxiety of the government and the apprehension of the public in such degree as to make those in power less attentive to appeals to do what should yet be accomplished.

As to the relation of the medical profession to public opinion on small-pox and vaccination, he said:

"It seems to me the reasonable duty of this Association at this time is to declare and proclaim its unabated faith in the virtue of vaccine to protect from small-pox, to render persons as immune against variola as an attack of variola itself, and that it is innocent of all mischief when the vaccination is done by a vaccinator who is a competent judge of both the purity of the vaccine and the fitness of the vaccinee.

"The progress of medicine in the immediate future must be along biological lines. The microscope has revolutionized our knowledge of the world of living things, and to us has been discovered the generators of the most extensive and persistent and malignant epidemics that periodically decimate the earth, as well as intractable and fatal disorders that we have always with us. Another line of biological workers have carried us back through the morphology organs, tissues and cells to the origin of vital activity in protoplasm, and still more important, in doing so have given us glimpses of the origin and development of the somatic mind that will, when the scheme of nervous organization and function shall be clearly portrayed, dissolve the mystery that has in the past obscured our realization of the true nature of hypnotism, Christian science and other anomalous neuroses which the sciolists and, in an especial manner, those claiming to be doctors, are promulgating and practising to the discredit of true

scientists and the injury of the weak-minded and ignorant classes. We should apotheosize protoplasm, the dividing line between organic and inorganic matter, itself at once the result of the law of perpetual motion with which the Creator endowed the atoms of elemental matter, and the beginning of that phase of energy known as vital activity, which constitutes the entire vegetable and animal kingdom. No one people or class of people can claim exclusively to have opened the way into this more primitive arcanum of nature. The physicists of all nations, botanists, zoölogists, anatomists, physiologists and their congeners, have all participated in this progress. The distinction of Schwann, Virchow, Ferrier, Jackson, Pasteur, Koch and Steinberg is due to their advanced study of biology."

As to the proposed changes in the Code, he said:

"For years there has been a feeling among many most excellent and intelligent working members of the guild that the Code of Ethics did not fairly accord with the demands of the advanced profession in their intercourse with each other, nor with the proper reciprocal relations between the profession and the public, while, on the other hand, many members equally intelligent and devoted to the Association have felt that the Code of Ethics that has guided the Association through nearly half a century prosperously and honorably, and is still a reliable guide in every advanced thought and action, cannot be bettered for our present status, and should not be disturbed."

The Address of the President was referred to a committee of five—Drs. W. T. Bishop, Z. B. Todd, R. B. Cole, F. W. Mann, and J. P. Woodbridge.

On motion of DR. QUIMBY, of New Jersey, a committee was appointed to draft a resolution of protest to Congress against the threatened reduction of the medical and surgical force of the army. Dr. Quimby was appointed chairman of this committee.

The Report of the Treasurer, which was read by the Secretary owing to Dr. Dunglison's illness, showed a balance of \$6,156, in the treasury.

The Secretary's Report was largely devoted to presenting the action of the various State societies as to the revision of the Code. Twenty-one societies were opposed to the change. Nebraska, Vermont and Indiana were in favor of the change. Wisconsin and Florida laid the matter on the table. Three had not yet considered the question, and from eleven no reply had been received.

The following resolution was adopted:

Whereas, Dr. R. J. Dunglison has been for seventeen years a faithful, energetic Treasurer of this Association, without any compensation; therefore, be it

Resolved, That the hearty and unreserved thanks of this Association be cordially extended to him for his efficient and laborious duties on behalf of this Association, and a copy of this resolution be forwarded by the Secretary to Dr. Dunglison.

In the afternoon the sections held their meetings.

In the evening the San Francisco County Medical Society gave a reception to the members of the Association and ladies, which was attended by over five hundred guests.

SECOND DAY. — WEDNESDAY.

The general session of the second day was called to order at noon by the President to listen to the Address on Medicine by DR. C. H. HUGHES, of St. Louis, on

THE NERVOUS SYSTEM IN DISEASE AND THE PRACTICE OF MEDICINE FROM A NEUROLOGICAL STAND-POINT.

He spoke first of the great advance of modern medicine, saying that as Hippocrates drove the devotees of superstition from the Temple of Hygeia, and taught the people that offended gods could neither bring, nor propitiated gods dispel, disease, and as Andreas Vesalius defied the popular prejudice and ecclesiastic power of his day, at the risk of his life, to make his first human dissection, so his professional descendants of to-day continue breaking down barriers of ignorance, of prejudice and superstition in the way of man's happiness and prosperity, unlocking the secrets of Nature's arcanum and setting the captive mind and organism free from the enthrallment of disease.

The recent epidemics of influenza had done much to emphasize to physicians the great therapeutic importance of understanding the intricate influence of the nervous system. All forms and manifestations of disease were dominated by the nervous system, and it was in the slightly disordered functioning of this marvelous organization that the early approach of disease was to be recognized. Even bacteriology was second in importance to an understanding of neurology for the explanation of the origin and onset of disease.

"And now in the sunlight of advancing science, and of the approaching twentieth century, I proclaim that neuriatry and the practice of general medicine are practically one. The practice of medicine is rapidly becoming one of neurological methods, of neuriatry and psychiatry; and the best neurologist, all other attainments being equal, must of necessity make the best general practitioner. The boon of hypnosis and narcosis under the many methods for its induction known to our art, saving the insomniac from the precipice of mental overthrow or neural failure in the lower centres of the cerebro-spinal axis or peripheral nervous system; the power of antiseptics, and through it the wonderful procedures and possibilities of modern surgery, and this *fin de siècle* hygiene; the many and marvellous therapeutic and hygienic advances in promoting the phagocytosis of the toxic bacteria, the destruction of the ptomaines, and in other directions of relief and cure: the discoveries of pathology, histology, medical chemistry, biology, neurology, psychology, psychiatry, and the contributions of surgery, gynecology, ophthalmology, otology, laryngology, proctology, and the other specialties of study and work, have made the later decades of the present century the most memorable in resourceful discovery in the history of medicine or in the history of mankind."

The Librarian's Report recommended the transfer of the library of the Association to the Newberry Library in Chicago.

The Report of the Trustees of the *Journal* was accepted, after some opposition, by a vote of 86 to 33.

THIRD DAY. — THURSDAY.

The Society was called to order at 10.30 A. M. After some general business, and the election of Dr. H. H. Brown of Chicago to fill the vacancy in the judicial council caused by the death of Dr. Murphy, the Committee on the Revision of the Constitution made its reports. The majority report was presented by DR. W. M. HOLTON and the minority report by DR. H. D. DIDAMA. After a sharp discussion, the minority re-

port (opposed to a change) was adopted as the report of the Committee by a vote of 161 to 70.

FOURTH DAY. — FRIDAY.

The closing session of the Association was called to order at 10.30 A. M., the President in the chair.

The first business to come before the meeting was the debate on the

REVISION OF THE CODE OF ETHICS,

which followed closely the lines of the discussion on the Constitution of the day before. The minority report, presented by Dr. Didama, was adopted. The next business was

THE ELECTION OF OFFICERS.

The ticket presented by the Nominating Committee was elected by acclamation.

President, Donald McLean of Michigan. Vice-Presidents — Starling Loving of Ohio, William Watson of Iowa, W. B. Rodgers of Tennessee, F. S. Bascom of Utah. Treasurer, H. P. Newman of Illinois. Permanent Secretary, William B. Atkinson of Pennsylvania. Assistant Secretary, G. H. Rohe of Maryland. Librarian, passed. Chairman of Committee of Arrangements, Julian J. Chisholm of Maryland. Board of Trustees — Joseph Eastman of Indiana, J. T. Priestley of Iowa, John E. Woodbridge of Ohio (unexpired term), J. W. Graham of Colorado, (*vice* D. C. Patterson, deceased). Judicial Council — D. W. Crouse of Iowa, R. C. Moore of Nebraska, T. D. Crothers of Connecticut, G. B. Gillespie of Tennessee, W. T. Bishop of Pennsylvania, C. H. Hughes of Maryland, I. J. Heiberger of the District of Columbia, H. Brown of Kentucky.

The meeting of 1895 will be held in Baltimore.

The Address in Medicine will be given by Dr. W. E. Quine of Illinois; in Surgery, by Dr. C. A. Wheaton of Minnesota; and that in State Medicine, by Dr. H. D. Holton of Vermont.

The question of excluding advertisements of preparatory remedies from the *Journal* of the Association was referred, after some discussion, to the Judicial Council, which decided, after debating the whole afternoon, that one of the advertisements complained of had been inserted through inadvertence. The attention of the Trustees was called to the other one.

The Annual Addresses in Surgery and in State Medicine were then read by title only, as neither Dr. Rohe or Dr. Laplace attended the meeting or sent any manuscript.

MASSACHUSETTS MEDICAL SOCIETY.

THE ONE HUNDRED AND THIRTEENTH MEETING.

The sessions of the Sections in Medicine and in Surgery were held at the Harvard Medical School on Tuesday, June 12th.

The Shattuck Lecture was given on Tuesday evening, by Dr. THOMAS DWIGHT, upon

THE RANGE AND THE SIGNIFICANCE OF VARIATIONS IN THE HUMAN SKELETON.

The exhibit this year was chiefly educational in character. Boards of health were represented by those of Cambridge and Lowell. The latter had an excellent set of diagrams, tables, photographs, etc., illustrative of its special duties. The plant for crema-

tion of garbage, in which Lowell has led the way, was illustrated in detail. Especially instructive tables were those giving the statistics relative to the recent small-pox cases, also to the falling off in the death-rate since the establishment of the board. Mr. James H. Emerton had a unique exhibit of his *papier maché* models of human bones, etc., so valuable for class purposes. Among them were a gigantic skull, two and a half by three and a half feet in diameter, long bones, vertebrae, brain, liver, an encysted trichina, all correspondingly enlarged.

There were the usual exhibits of representative instrument-makers and publishers.

The exhibit of especial interest was that of the Massachusetts College of Pharmacy. It consisted of a carefully prepared and authentic collection of all the crude drugs, preparations, organic products, chemicals, test and volumetric solutions and reagents official in the revised United States Pharmacopœia of 1890, collected, prepared and tested by students of the college. It was a surprise to all to see that the Pharmacopœia was so great a work as to permit so extensive an exhibit of over eleven hundred articles. Few of us realize that provision is made for seventy-two tinctures and nearly twice as many extracts and fluid extracts; and it was new to a good many who saw it that by following Pharmacopœial directions any pharmacist, just as the students had done, can prepare pills, troches, etc., of exact dosage, ready solubility in the body's fluids, and also of elegant appearance. As this pharmacopœial collection is unique, is of unusual interest, and as complete as it could be made, regardless of expense, the College of Pharmacy intends preserving it in its museum for permanent exhibition.

The One Hundred and Thirteenth Annual Meeting was held on Wednesday, June 13, 1894, the President, DR. JAMES C. WHITE, in the chair.

The Secretary reported that during the year 153 members had been admitted, and that 26 had died.

Papers were read upon the following subjects:

ICHTHYOL IN GYNECOLOGY,

by DR. MALCOLM STORER, of Boston.

CHRONIC INFLAMMATION OF THE SEMINAL VESICLES,

by DR. G. W. ALLEN, of Boston.

THE FREQUENCY OF PUERPERAL SEPSIS IN MASSACHUSETTS, ITS DIAGNOSIS AND EFFICIENT TREATMENT,

by DR. EDWARD REYNOLDS, of Boston.

Discussion by DRs. C. M. GREEN, of Boston; E. H. STEVENS, of North Cambridge.

THE ANNUAL ORATION¹

was delivered at noon, by DR. R. H. FITZ, of Boston.

THE ANNUAL DINNER

was served at one o'clock, there being about nine hundred and fifty members present.

At the close of the dinner the Anniversary Chairman, DR. SILAS D. PRESBREY, of Taunton, spoke as follows:

Another year has passed, and once more our Society welcomes you to her annual festivities. At our last meeting we were reminded that we were then at the beginning of a great national celebration; at this time

¹ See page 581 of the Journal.

the Columbian Exposition is finished, and we may well consider some of the contributions that were made by the medical profession of the State, and we may justly take pride in the work that was done by members of this Society.

The Massachusetts State Board of Health has received high praise, both in this country and abroad, for the comprehensive exhibit of its work and its methods. The *Journal of the American Medical Association* says: "This exhibit is an object-lesson well worthy of study by other States, as owing to the increased density of population and increase of manufacturing wastes, our water-supplies are annually becoming more polluted, and the necessity for such work more and more imperative." Thus the oldest board of health of the country justified the opinion that it is a leader and an authority in the work in which it is engaged.

The Medical Department of Harvard University made a striking exhibit of the most advanced methods of instruction, and in some respects methods entirely unique. A Harvard man could not fail to feel a thrill of satisfaction when he found himself surrounded by the familiar frozen sections and the mammoth models. Studies in physical culture, as expressed by charts, photographs and models, showed the zealous care with which the health and growth of the Harvard student are watched and promoted.

I would not miss the opportunity to call to your attention an innovation of the last year which seems to me especially worthy of your notice and of your patronage. Through the school year the Faculty of the Harvard Medical School has given a course of evening lectures on special subjects, which physicians were invited to attend without charge. The lectures were given on each Wednesday evening from October to May, vacations excepted. This work was done by gentlemen of great experience in teaching, and each lecturer is an acknowledged authority on the subject which he handled. I hope this, the first and experimental year, may prove the beginning of a permanent custom.

The third feature of the medical year is the adoption by the Legislature of an Act to provide for the Registration of Physicians and Surgeons in the State of Massachusetts. I am happy to say that after hard work and careful management the Act has passed both branches of the Legislature and has received the Governor's signature.

Fellows, the weightier matters of the physician's work and duty have had ample discussion for two days in the neighboring halls; here we have met for refreshment and entertainment. How well your admirable Committee of Arrangements have attended to the refreshment you are all able now to judge; it only remains for me to introduce to you the entertainment.

Dr. Presbrey then offered the first regular sentiment: "The Massachusetts Medical Society," which was responded to by the incoming President, Dr. F. K. PADDOCK, of Pittsfield, who spoke as follows:

It would seem to me more proper that the response to this toast should be made by my predecessor, Dr. J. C. White, who has so faithfully and successfully conducted the affairs of the Society for the last two years. It will be my greatest ambition to perform the duties of this office as satisfactorily as he has accomplished them.

There is no question about the importance and emi-

nence of the Massachusetts Medical Society. Its members embrace the best medical talent in the State, and for seventy years it exerted a controlling influence over the practice of medicine throughout the Commonwealth. In 1859, for various reasons, the Legislature deprived the Society of this control, so that for thirty-five years the people of the State have been preyed upon and defrauded without opposition by hordes of quacks and charlatans.

The dignity of this Society and the welfare of the community demand that this condition shall be changed. Other States have laws to regulate the practice of medicine; this State should do likewise. During the last session of the Legislature a successful effort has been made to establish a law to regulate the practice of medicine. For this legislation we are indebted to a member of this Society, Dr. Harvey, of Westboro'.

The good influence of this Society is increased by every regularly educated, respectable physician who joins it; and I think that it is the duty of the members to personally solicit candidates for admission.

"Lessons from the Experience of Two Years in the Presidency of the Massachusetts Medical Society."

DR. J. C. WHITE, in response, said: I told you at a former dinner, in the few words I then addressed to you, that I hoped to have more of interest to say when I should have become better acquainted with the condition of the Society and the functions of the high office with which you have honored me. There is no other opportunity offered to the President to meet so large a gathering of members of our Association, and to present any opinions he may have formed concerning its welfare, as this occasion, so that he must avail himself of it for this purpose.

During my term of office I have visited, for purposes of observation and inquiry, all the eighteen districts into which our Society is divided, and which present so striking a diversity in their physical aspect and in the character of their inhabitants, as in the long stretch of sandy Barnstable, with its remote settlements, the lonely and sparse hill-towns of Berkshire, and the many busy centres of factory life, with their dense throngs of foreign peoples. We hardly appreciate here in the metropolis and its immediate surroundings how unlike our own are the life and professional relations of these other districts, which are so essential a part of our State Society. Think of a Massachusetts township with only 219 inhabitants, and of these all but 19, Indians; and of 80 or more towns in the State without a resident Fellow of this Society. It has been my object to study its workings in all these regions, and to gather the views of its members living under such diverse conditions as to how satisfactorily it may be fulfilling its mission.

Let me first briefly define what, in my opinion, should be the chief objects of this Association:

- (1) The cultivation of friendly relations and mutual support among its members.
- (2) The establishment and maintenance of rules to regulate the practice of medicine in its relations to the community.
- (3) The stimulation of progress in our art by meetings for medical improvement, by encouragement of scientific research, by the foundation of scholarships and lectureships.
- (4) The elevation of medical education.
- (5) The securing and enforcement of laws for the

preservation of the public health and the enlightenment of the people concerning it.

Now I have found that, on the whole, a satisfactory loyalty to these objects prevails throughout the Society; that much interest is everywhere manifested in the district meetings, and that the papers there presented are most praiseworthy. In some parts of the State, where the towns are thinly peopled and widely separated, the attendance was not large.

It was a great surprise to me to note how small a proportion of the physicians in many places were graduates of our Massachusetts schools of medicine. Thus, in one district containing 36 Fellows, only three, and in another of 38 members, but two, had received such a degree of M.D. In the seventeen districts of the State (omitting Suffolk), representing 1,200 members, only 463 are graduates of our medical schools.

Again, I was astonished to learn how many physicians were practising medicine in this State, graduates of medical colleges whose diplomas are recognized by us, of excellent reputation, regarded as their peers by our Fellows, their associates in private medical bodies in many instances, and with whom they consult freely, and yet who are not members of the Massachusetts Medical Society. Many of these are gentlemen who have come from other States, where they were in good standing in their State societies. I cannot give you their exact number, but it is very large. The president of one district informed me that there were twenty such men in his city. Another president of a small district named twelve to me. The Treasurer of the Harvard Medical School Alumni Association informs me that 775 of its members reside in this State, and that of this number 118 are not members of our Society, or 15 per cent. Now it is very important that every good physician should be enrolled upon our list of Fellows. It is better for them, much better so for us, and why are they not members? Because in the majority of cases they are unwilling to run the possible risk of being stamped by our examining boards as incompetent. There can be no doubt that the examinations of our censors have often been too severe, and of a character to test the school rather than the practical knowledge of the candidate. Within two years two distinguished professors, recently become residents amongst us, and desiring membership, have refused to offer themselves to the test of such methods of examination. How many of my colleagues on this platform would venture to act otherwise? At the time when our present laws defining the duties of censors were formed, the requirements for a medical degree in most or all schools were lax and insufficient, and the Society had to protect itself by an independent and rigid examination. It is very different now, and in all good schools the requirements for the degree of M.D. give practical assurance of sufficient medical knowledge for our purpose. Yet within the last two years graduates of the Harvard Medical School have been turned aside by our censors. At a meeting of one district society I heard read aloud the names of several young men who had failed to pass the examination of a neighboring board. Can one wonder that our present system repels candidates, and serves to keep good men out of the Society, whereas its object is to get them in? You are aware that at a recent meeting of the Council a system has been adopted by which the entrance to this Society may be made more lax, but still sufficiently protected. This plan is to

come before a special meeting of the Society next October, and deserves your careful consideration.

"The Commonwealth of Massachusetts."

LIEUTENANT-GOVERNOR WOLCOTT said that, having addressed the Society before, it required the delicate touch of a Hawthorne to give any charm to twice told tales. The two characteristic actions of the medical profession which were unparalleled in any other are, first, the gratuitous treatment of the poor in hospitals and asylums, whereby the most unfortunate person can call upon and receive the aid of the most skilful physician; and, secondly, the close observance of that unwritten law, which has more force than statutory law, that whatever device or remedy for the alleviation of suffering a physician may by skill or study discover, shall be freely given to the public. The benefit to a community of the scientific knowledge and enthusiasm which the medical profession brings so freely to the service of the public good is not easy to estimate. For this, too, Massachusetts offers her congratulations and acknowledgment.

The Medical Registration Bill is certain to prove of permanent utility to the Commonwealth, although Massachusetts comes a little haltingly into line. If it but keeps the word "doctor" back to its old meaning of teacher—a teacher of sound sanitary law, of a high standard of honor, a teacher of the laws of public health—so that no charlatan can use it, the Governor and members of the Legislature are entitled to your thanks and those of the community.

"The City of Boston: New England's Thought-Centre."

MAYOR MATTHEWS being unable to attend the dinner, no response was made to this toast.

"Harvard University."

PRESIDENT ELIOT said that in looking back over the last twenty-five years nothing was more clearly marked than the progress of professional education, and in this medicine has taken the lead. There has been more gain in the education of physicians and surgeons than in any other department of the university. He had often felt the wish that medical schools in general, and those of Massachusetts in particular, were producing more country doctors. The country doctor should be given chief place. He needs a better education than the city doctor. He has no specialist at his elbow. He must know himself, and act himself. The training of the country doctor is most important, and needs to be developed, for he is more than a physician. He is a missionary. He is a social reformer—a sanitary reformer. He brings to his community the scientific spirit, a most valuable and important thing. The country doctor has one immense privilege and great happiness for his comparative isolation, that of living in the country, an inestimable prize for himself and for his family—as one who from long observation of where the most promising students come from can testify.

Commenting on the examinations of the Society, he said it had been proven useless to examine at one time a man on studies which had taken six or seven years to acquire. This practice had been given up in the university, and it was not reasonable to do so in this Society. What is wanted is an examination which will test power. The question which the Council

should put to each candidate is not, "What do you know of this book or that book?" but "What can you do in judgment and tact and good temper for your patients?"

"The Physician as seen by the Lawyer."

ATTORNEY-GENERAL KNOWLTON spoke of the general relations of the lawyer and the physician. As the physician had been his first friend in this world, so he would be with him at the close of life to make it easy. It seemed to him that the same quality of character was essential to success in both the lawyer and the physician—that peculiar quality which for lack of a better term is called "nerve," the ability to face great danger and risk in an impassioned manner uninfluenced by personal feeling. The doctor who attempts to care for his own case was likened to the man who makes his own will; both are more daring than wise.

"The Physician as seen by the Journalist."

HON. WILLIAM REED, JR., spoke of the earlier attempts to secure a Medical Registration Bill, in some of which he was actively engaged himself while in the Legislature. He congratulated the Society, not that the members had protected themselves, for they needed no protection beyond the honor of the Society, but that the people of the State had been protected.

"The Medical Man of Japan."

REV. ARTHUR M. KNAPP spoke of the remarkable progress of medical science in Japan since 1854, and the magnificent work done by the medical school of Tokyo, which was the first step in the formation of the great university there. He related many interesting facts about the medical history of Japan.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

THE annual meeting was held at the Medical Library, Boston, on Wednesday, June 13, 1894.

The meeting was called to order at eleven A. M. by the President, DR. JAMES C. WHITE. One hundred and fifty-five Councillors indicated their presence by signing the roll.

The Secretary read the names of 153 Fellows admitted since the last annual meeting, and of 36 whose deaths had been recorded.

The Treasurer, DR. FORSTER, presented his report, which was accepted, showing the receipts of the Society for the year ending April 15, 1894, with the balance on hand at the beginning of the year, to have been \$11,887.92, and the expenditures \$8,895.09, leaving a balance of \$2,992.83.

DR. DRAPER, for the Committee on Membership and Finances, reported the names of four Fellows whom the Committee recommended to become retired members; of eight to be allowed to resign; and of four to be dropped for non-payment of assessments.

The report of the Committee was adopted.

It was also voted, on recommendation of this Committee, that \$1,900 of the surplus in the treasury be distributed among the district societies.

The Committee on Publications reported that DR. ROBERT T. EDES, of Jamaica Plain, has been ap-

pointed to deliver the Shattuck Lecture at the annual meeting of the Society in 1895.

The Librarian, DR. BRIGHAM, presented his report. The Committee on Nominations reported, and the following were chosen officers of the Society for the ensuing year: President, Dr. Franklin K. Paddock, of Pittsfield; Vice-President, Dr. Frederic A. Sawyer, of Wareham; Treasurer, Dr. Edward J. Forster, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Boston. Dr. Alfred Worcester, of Waltham, was chosen Orator, and Dr. Herbert L. Burrell, of Boston, Anniversary Chairman, for the annual meeting of the Society in 1895.

Voted, That the next annual meeting of the Society be held in Boston on the second Wednesday in June, 1895.

The following Standing Committees were appointed: Of Arrangements: Drs. H. Jackson, J. C. Munro, A. Thorndike, A. K. Stone, J. G. Mumford, N. V. Pierce.

On Publications: Drs. B. E. Cotting, O. F. Wadsworth, G. B. Shattuck.

On Membership and Finances: Drs. F. W. Draper, J. Stedman, E. G. Cutler, L. R. Stone, A. H. Johnson.

To Procure Scientific Papers: Drs. H. P. Bowditch, F. H. Zabriskie, H. L. Burrell, S. B. Woodward, L. Wheeler, C. W. Townsend.

On Ethics and Discipline: Drs. G. E. Francis, F. C. Shattuck, C. G. Carlton, E. Cowles, J. F. A. Adams.

On Medical Diplomas: Drs. E. J. Forster, H. E. Marion, E. N. Whittier.

DR. C. M. GREEN called attention to the fact that for two years there has been no session of the Section in Obstetrics and Gynecology at the annual meeting of the Society; that owing to the interest of members in the other sections it is difficult to obtain a satisfactory audience, and an injustice to ask for the preparation of papers. He moved, and it was voted, that the rule by which the Obstetrical Section was established be rescinded, and that the Section be abolished.

DR. G. B. SHATTUCK offered resolutions which were adopted:

That a Standing Committee on State and National Legislation be appointed at the annual meeting of the Councillors.

That this committee shall consist of five members, including the President, *ex officio*.

It shall be the duty of this committee to take such action in reference to proposed legislation as shall, in their opinion, be most conducive to the interests of the medical profession, and to make an annual report thereon.

DR. GAGE offered the following, which, after some discussion, was adopted:

Whereas, the expenses attending the annual meeting of the Society have been increasing in recent years, and now exceed what seems to be a reasonable amount for this object; and *whereas*, it is desirable that such expenditures should be more under the immediate control of the Council than hitherto,

Voted, that the Committee of Arrangements for the anniversary shall hereafter consist, in part, of members of the Council.

DR. J. F. A. ADAMS presented the following, which was passed:

Whereas, it is evident that the affairs of the Society can be best administered by the coöperation of those who have the widest experience with its condition in all sections of the State,

Resolved, that in the opinion of the Council it is advisable that District Societies shall include in their election to this body such ex-Presidents of the State Society as may reside therein.

The following preamble, together with amendments to the By-Laws abolishing the office of Anniversary Chairman were, on motion of Dr. CHEEVER, adopted :

Whereas, it is more consistent with the dignity of the office, and in conformity with the custom of all societies of such high character, that the President should preside over all meetings, and especially at the most important public occasion, the annual dinner : *Resolved*, etc.

Adjourned at 1.15 P. M.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, WASHINGTON, D. C.,
MAY 29, 30, 31 AND JUNE 1, 1894.

FIRST DAY. — TUESDAY.

AFTER a brief Introductory Address, the President, DR. ANDREW H. SMITH, New York, read a paper on

ALIMENTATION IN PULMONARY DISEASE.

In pulmonary affections the problem of alimentation is complicated by special conditions growing out of the functions of the affected organs. We are too apt to regard nutrition as if it were only another term for digestion, and practically to assume that, if the food taken into the stomach goes through the proper changes in the alimentary canal, and the nutritive portion is properly taken into the blood, that is all with which we need have concern. The products of digestion when received into the circulation are not blood. They represent neither serum nor corpuscles: they are, in fact, dead matter, requiring to be vitalized by the process of assimilation before they become a part of the living blood.

Of the manner in which this change takes place we know almost nothing. But we do know that an essential factor is the process of oxygenation that takes place in the lungs. Material which has not undergone this change is, for the time being, not only useless to the economy, but a hindrance to proper metabolism.

If, then, a considerable obstruction exists to the entrance of air into the lungs, it follows that an addition of more nutritive material to the blood than can be acted upon under the circumstances of crippled respiration, will only add to the circulatory embarrassment and aggravate the condition of the patient.

Under these conditions, therefore, we should study in acute cases to give as little nourishment as will sustain the vital powers, rather than as much as the stomach can be made to digest.

If we pass to chronic affections of the lungs, the same principle will hold good, with certain important modifications in practice. We have a chronic condition in which we are confronted with a restricted hæmatosis on the one hand and urgent necessity for a high degree of nutrition on the other. The difficulty of reconciling these two conditions will be in proportion to the degree of lung-insufficiency.

In the minor degrees of chronic lung-insufficiency,

the respiratory movements make up in frequency what they lack in amplitude. So long as this compensation can be fully maintained, there may be no considerable defect in hæmatosis, and, in the absence of fever, no marked failure of nutrition. But, sooner or later, a time comes when the respiration is so far impaired that enough oxygen cannot be taken into the blood to act upon such an amount of nutritive material as is necessary for the full maintenance of the economy. The moment this stage is reached, the appetite fails in proportion to the defect in hæmatosis. Unless we can improve the hæmatosis, and with it the whole process of metabolism, we shall only do harm by high feeding. Digestion in these cases fails as well as assimilation. Moreover, in these chronic cases with pronounced anæmia and emaciation, we cannot rely chiefly upon nitrogenous food, as we must do in acute affections of the lungs. The heat-producing hydrates and fats are required in addition, and these are more difficult of assimilation. A vicious circle is established, the defective hæmatosis aggravating the dyspepsia, and this in turn resulting in greater poverty of the blood. Under these conditions, life in the open air is of the utmost importance.

The speaker has obtained much benefit in cases of this kind from rectal injections of defibrinated blood. This material seems to be absorbed almost unchanged, the corpuscles as well as the serum; it being a frequent experience that no trace of blood is found in the next defecation. There being no digestive action upon the blood, its absorption into the venous circulation is almost equivalent to transfusion very slowly performed; and but little change in the way of hæmatosis is required to fit the added material for the immediate use of the tissues.

Dr. Smith described a case of phthisis treated in this way. There was an enormous cavity at the summit of the right lung; the patient was emaciated to the last degree, weighing only 101 pounds. After two weeks of the treatment with blood enemata, he gained seven pounds. At the end of three months he left the hospital; the cavity in the lung had contracted greatly; expectoration had nearly ceased; he had gained 33 pounds.

Dr. Smith said: Though defibrinated blood is preferable for this purpose, good results may be obtained with the materials usually employed for rectal feeding, provided the patient can live much in the open air.

In the discussion which ensued, DR. KARL VON RUCK referred to twenty or thirty cases in which he followed the method suggested by Dr. Smith, and carefully observed the number of corpuscles and the hæmoglobin present. All the cases showed marked improvement in the blood condition.

The paper of DR. BOARDMAN REED, of Atlantic City, on

THE RELATION WHICH ALIMENTATION SHOULD BEAR TO OXYGENATION IN LUNG DISEASES,

was read by DR. JAMES B. WALKER.

Dr. Reed concurred in the opinion of Dr. Smith, that any excess of food beyond the amount which can be perfectly digested and assimilated, is injurious. When the intake of oxygen is large, as in the case of a robust person exercising actively in the open air, a maximum amount of food can be safely given. When, on the other hand, a patient has one or even both lungs crippled, the amount of food which he can digest

and thoroughly oxidize into a nutritive pabulum for the uses of the economy, is much less. Between these two extremes are found patients with all possible degrees of capacity and opportunity for absorbing oxygen, and in consequence equally varying degrees for digesting and assimilating food. Evidently, then, there is such a ratio as has been assumed. It is exceedingly important that this fact be borne in mind in deciding the proper feeding of a case of lung disease.

Dr. Reed gave a detailed report of six cases (four of the number being now either well or convalescent), concerning which he says: The results are, on the average, considerably better than when it was my practice to encourage the fullest feeding of consumptive patients. They have been obtained with the aid of so little internal medicine, and that addressed almost exclusively to the digestive tract, that the management of the diet and hygienic regimen generally should receive the credit.

An abundance of pure healthy blood circulating normally in the lungs is the most essential prerequisite to a cure of phthisis pulmonalis. Hence the paramount importance of looking closely to the blood-making processes by securing as perfect digestion as possible, together with a complete oxidation of its products, so as to spare the lungs from the injurious task of assisting in the excretion of the poisonous compound resulting from suboxidation and decomposition. To obtain these ends satisfactorily, the total amount of aliment ingested must not be in excess relatively to the amount of oxygen absorbed. Dr. Reed considered the importance of selecting a special climate for such cases greatly over-estimated, though changes of climate exert a powerful stimulant action upon nutrition, for a few months especially.

THE METHODS AND VALUE OF SUPERVISED EXERCISE IN THE PROPHYLAXIS OF PULMONARY PHTHISIS,

was the title of a paper by DR. GLENTWORTH R. BUTLER, Brooklyn. The substance of Dr. Butler's paper was as follows:

Pulmonary tuberculosis is essentially a disease of defective nutrition. Although of microbial origin, a certain vulnerability of the tissues precedes and underlies the bacillary growth. The same individual may be at one time vulnerable, at another time invulnerable, as shown by the onset and arrest of the disease. The therapeutics of this disease demands that every possible means should be employed to strengthen the resisting power of the tissues. Aside from measures designed to prevent tuberculous infection, these means may be thus enumerated: climate; abode and out-door life; medication, general and local; personal hygiene and habits of life; diet; exercise, general and local, with its corollary, rest.

For the pretuberculous status and incipient cases, one of the valuable resources for permanently increasing vital capacity is "pulmonary gymnastics." The appreciably best method of taking such exercise is under the instruction and supervision of a trained operator, acting under general directions from the physician. This method admits of beginning with the gentlest exercise and progressing to the severest, in accordance to the patient's varying condition. It ensures the patient's attendance and economizes the physician's time. Graduates of physical-culture schools can be found in all of the larger and most of the smaller towns and cities.

The paper embraced a detailed discussion of the physiologic effects and relative advantages of the use of compressed air, breathing-tubes, and voluntary exercise, with a report of cases, and a series of photographs from the living model.

Dr. E. O. OTIS, in the discussion, laid great stress on the careful supervision of exercises by the physician, in contrast with the ordinary hap-hazard direction, "to take physical exercise." He said: "If this careful arrangement of exercises, in the first place, and careful supervision, in the second place, can be followed out with pretuberculous cases and incipient ones, as Dr. Butler has suggested, much might be achieved. The practitioner who treats cases of phthisis is bound to study the application of chest gymnastics as he would the effect of any drug he uses.

SECOND DAY. — WEDNESDAY.

The second day's proceedings began with a paper entitled:

THREE YEARS' EXPERIENCE IN THE SANITARIUM TREATMENT OF PULMONARY DISEASE, NEAR BOSTON, by DR. VINCENT Y. BOWDITCH, which will be published in full in the JOURNAL.

Dr. R. G. CURTIN, in a paper on

CREASOTE, GUAIACOL AND BENZOYL OF GUAIACOL IN PHTHISIS,

gave a brief *résumé* of observations in the use of these drugs, covering a period of fifteen years. Concerning guaiacol, he says: "In acute catarrhal phthisis with high temperature, little or no good is to be expected from its use. In acute tuberculosis no material benefit results from its employment. The class of cases that seem to be most benefited is the one in which we have slight elevation of temperature with poor nutrition, slow digestion with fermentation. Guaiacol has no specific effect upon the bacillus. In cases where the process was slow, beneficial results followed the use of guaiacol."

Dr. Curtin's conclusions were as follows:

Guaiacol is not so irritating to the stomach as creasote. Guaiacol is not so liable to produce irritation of the kidneys, nor to be followed by hæmaturia.

Among the advantages of guaiacol are: First, it is more easily taken; second, the process of manufacture insures purity; third, the exact quantity of medicinal substance administered is known.

Dr. A. L. LOOMIS: We find no evidence that these drugs have any other effect than to aid assimilation and digestion in a certain class of individuals. We cannot use them hypodermically. Whether we shall gain something by the use of the vapor seems to me still unsettled. They have no specific action upon the bacillus.

Dr. JUDSON DALAND reported five cases at the Philadelphia Hospital, in which the object was to see if guaiacol, administered by the skin, had any effect upon the temperature. No results were obtained.

Dr. VON RUCK reported one case where a dangerous fall of temperature followed the administration of guaiacol by the skin; the other cases showed little change.

SHALL ANYTHING BE DONE BY LEGAL AUTHORITY TO PREVENT THE SPREAD OF TUBERCULOSIS?

Dr. FREDERICK I. KNIGHT, of Boston, called at-

tention, in this paper, to the fact that, though twelve years had elapsed since the infectious nature of tuberculosis was established beyond question, very little had been done to prevent its spread. This was attributed by Dr. Knight not to a want of belief in the infectiousness of the disease, but to the magnitude of the problem and manifest difficulties in dealing with it. Dr. Knight claimed, however, that boards of health are organized to keep people informed, and not in ignorance, of the dangers by which they are surrounded; and gave notice that in the business meeting he would introduce a resolution upon this subject.¹

An interesting discussion followed the presentation of this resolution. All the members agreed that something ought to be done to prevent the spread of tuberculosis; the only difference of opinion being as to the means. Much regret was expressed as to the present constitution of boards of health in this country and their connection with politics; Massachusetts was congratulated upon the high character of the Chairman of its State Board of Health.

(To be continued.)

Recent Literature.

A Practical Treatise on Diseases of the Skin. Third edition, thoroughly revised and enlarged. By JAMES NEVINS HYDE, A.M., M.D. Philadelphia: Lea Bros. & Co. 1893.

Ten years have passed since the appearance of the first edition of this excellent text-book of skin diseases. The third edition, just issued, fulfils all the expectations warranted by the great accumulation of dermatological material since the earlier editions were brought out, and puts this work at the head of the modern American treatises on skin diseases. The author has introduced thirty-five new diseases in this edition, and has corrected and improved almost every page. He is especially to be congratulated on his chapter on tuberculosis, which he has amended so that lupus vulgaris, and scrofuloderma assume their proper place as varieties of this disease, and are intelligently considered in the light of modern pathology. Five plates and twenty-two wood-cuts, all of great excellence, have been added to the illustrations. The excellence of the chapters on treatment, together with the care that has been bestowed on subjects that have acquired new interest, make the book one to be warmly recommended to any one seeking for a reference book in this branch of medicine.

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. LEONARD CORNING, M.A., M.D. With an Appendix, *Eye Strain, a Cause of Headache*, by DAVID WEBSTER, M.D. Third edition, 8vo, pp. 275, 17 illustrations. New York: E. B. Treat. 1894.

To the third edition of this book a chapter has been added on the localization of the action of remedies upon the brain. This method of treatment consists of applying the remedies to the nasal mucous membrane, and increasing their effect by compression of both jugulars.

¹ The article of Dr. Knight, including the resolution, will be published in full in the Journal.

THE BOSTON

Medical and Surgical Journal.

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THE PLAGUE IN CHINA.

THE word plague has had but little of its terrible real meaning for Europeans for many years. Eastern Russia and Persia had a short and mild experience some fifteen years ago; but practically Europe has been free from the disease since 1665, when London was scourged. Its native home is China; and in some cities there it appears every year during the dry season, but with a mild degree of poison, attacking only the poorer class of natives. The present epidemic is so widespread as to be of serious menace, as it has already attacked European settlers in the healthy portion of the cities.

Toward the end of April the extent of the outbreak at Canton became so alarming that the Board of Health at Hong Kong wrote to the Consular Surgeon at Canton, for a report of the true state of affairs. Dr. Renzie replied as follows:¹

"The first outbreak occurred in the last week of March, and was confined to a poor quarter of the city, near the South Gate. This neighborhood we visited on the 8th of April, and had an opportunity of examining one or two cases and also inquiring into the sanitary condition of the houses.

"The symptoms are as follows: With or without premonitory warning in the shape of malaise or chill, there is a sudden onset of fever rising to 105°, or over. There is much headache and cerebral disturbance, accompanied by stupor. In from twelve to twenty-four hours a glandular swelling occurs in the neck, arm-pit, or groin, rapidly enlarging to the size of a fowl's egg; it is hard and exceedingly tender. With or without a decline of the fever, the patient sinks deeper into a condition of coma and dies usually at the end of forty-eight hours or sooner. If six days are reached recovery is hopeful. The glandular swelling shows no signs of suppuration. In some cases epistaxis or vomiting of blood occurs; petechiæ appear in a few cases, but no regular eruption. Such are, briefly, the symptoms at the beginning of the disease. It was then extremely fatal, over 30 deaths having occurred in the small street we visited. The mortality was high, being over 65 per cent. of the patients attacked, whose houses are occupied by laborers and artisans; they are small and badly ventilated houses, with damp earthen floors. Underneath the flag-stones in front of the houses in question is the usual drainage arrangement, which, at the period of our visit, was in a very insanitary condition on account of the lack of water and in consequence of the prolonged drought.

¹ Report of Sanitary Board: Hong Kong Daily Press, May 11, 1894.

The people stated that at first many dead rats were found about the houses, but that after a few days these animals entirely disappeared.

"On the 17th of April we had again an opportunity of examining some cases in a Chinese hospital situated inside the North Gate of the city. The cases were all of a milder character than those we had seen the previous week. The native doctor in charge informed us that whereas the patients he treated at the outset of the epidemic died at the rate of about 80 per cent., the mortality had declined to about 25 per cent., and he seemed to be of the opinion that the disease was declining. Since then the disease has extended to other parts of the city, and also to Honam. We have had no opportunity of examining cases recently, but from what we can gather it appears to have in no way diminished either in frequency or severity. It is impossible to obtain reliable statistics as to the mortality, and we therefore refrain from expressing our opinion on this point."

The unspeakable filth of the poorer quarters of the Chinese cities had been much increased by the long drouth. For nearly seven months there had been no rain to speak of, but only a few light showers. The long time without serious epidemic had made the supervision of sanitary conditions lax, and the uncleanness of the poorer quarters polluted the air for considerable distances. A general cleaning out was at once ordered at Hong Kong, but the water-supply was too scanty to allow of thorough cleansing.

Some idea of what a cleaning up in a Chinese city means may be had from the Report of the Sanitary Board concerning the first general cleaning out some years ago. This report says, that during the eight days on which special facilities were offered for the work, no less than 2,400 tons of rubbish were removed in excess of the normal quantity, which was stated to be 100 tons a day. Of late years there has been no such accumulation; but the drainage is still notoriously defective, and the amount of surface and concealed filth is sufficiently large.

The cleaning and disinfecting at Hong Kong was begun too late, however, for the plague had already appeared, and some twenty cases were at that time in the Tung Wah Hospital. The early deaths were reported as due to fever; and it was only when several had occurred in quick succession that the true nature of the disease at Hong Kong was realized. At first, it was hoped to keep the disease down; but the upturning of dirt appeared to favor its spread, until even the better portions of the city and the foreign inhabitants were attacked. The mortality in Canton at first was 80 per cent., falling for a while to 30 per cent., but soon rising to 55 or 60 per cent., where it remained until the end of May.

Under ordinary conditions the disease is reported by Dr. Lowsan, of Hong Kong, not to be contagious, "but if healthy persons remain too long in the same atmosphere there is great probability of their catching the disease. The attendants at the Canton Hospital take care to smell of a bag of sandal-wood and aromatics during their work, and say that none of them have taken the disease. The disease appears to me more of a chemical origin than a bacteriological."

The disease had gathered such headway that it is hardly possibly to expect the recent much longed-for rains to do much in the way of checking the scourge.

Its course and developments unavoidably suggest a similarity to anthrax.

The terrible mortality rate, over 80 per cent., and the frightful rapidity of the disease, death ensuing often in twelve hours, should teach the lesson that cleanliness and sanitation should be the constant and precautionary care of a people, and not the last resort of a plague-stricken city.

MEDICAL NOTES.

THE PLAGUE IN CHINA. — A terrible epidemic of the plague is now raging in China for the first time in eleven years. The disease is reported by medical observers to be very similar, if not identical with, the Great Plague of London in 1665. The disease appeared first in Canton the 1st of April, and spread with frightful rapidity among the poorer classes until the deaths had numbered many thousands. Some statements put the mortality at 60,000. About the 8th of June the disease appeared in Hong Kong, where it is now epidemic. At first only the natives were attacked, the mortality being about ninety per cent., but finally the European inhabitants have become victims to the disease, and several deaths have been reported. The daily death-rate in Hong Kong is nearly one hundred. In Canton the spread of the disease continues, but the mortality is lessening.

THE CHOLERA. — With the return of warm weather the cholera has made its reappearance at various centres in Europe. The epidemic which began in April at Lisbon has somewhat abated, and is now officially reported once more not to be cholera. Cases have occurred at various places in Spain, but none are officially admitted, so that early quarantine is much neglected. In France cases have occurred in Finistere since the middle of April and number about four cases a day. In Russia the disease is very widely scattered, and has broken out in many of the provinces. Appearing first in the Polish districts and along the East Prussian border, the disease has attained its greatest severity in the districts of Plozk, Radom and Petrokoff, where the number of cases has already reached several hundred. During the last week there have been reported nearly a hundred cases with twenty-five deaths from Ciechanowice, a town thirty miles from the German frontier. In Warsaw there have been about ten new cases with six deaths each day since the first of May. The disease has appeared at Mislowitz and Stettin and throughout the Vistula district. Many towns in Galicia have been affected, especially Siczerynce and Skala. Turkey, as might be expected, has many centres of infection, none officially recognized. Although the epidemic at Constantinople has been severe, it is now stated to have ceased in that city, and the quarantine has been abolished. Several of the Black Sea ports are now infected.

SMALL-POX QUARANTINE AGAINST STAPLETON, S. I. — Dr. Doty, of the New York Board of Health,

has recommended that a quarantine be established against Stapleton, S. I., for the reason that small-pox is epidemic there, that it is not properly dealt with by the local authorities, and that the conditions in the village constitute a menace to New York City. He urges the Board to act promptly by asking the intervention of the State Board to the end that Stapleton may be cut off from communication with New York.

UNSEEMLY JESTING.—The *Medical Record* makes the following comment on the recent cartoon in *Life* called the "Vivisectionist": "The esteemed contemporary, *Punch*, does not always seem funny at this distance from its proper atmosphere, but it is always good-natured and generally just. Its New York imitator, *Life*, is sometimes neither one nor the other, but simply scurrilous. Its recent cartoon on the 'Vivisectionist' was a loathsome and cowardly performance, utterly false in its representation, mean in its insinuations and low in its intent." As descriptive of the picture, the *Record's* remarks are gentle and its language mild.

THE REGULATION ON THE USE OF OPEN STREET-CARS.—The New York City Board of Health has passed an amendment to the sanitary code, prohibiting the use of open street-cars except from June 1st to October 1st, and directing that during the daytime every fourth car on each line shall be a closed car, and during the night every third car.

HONORARY DEGREES.—At the annual commencement of Princeton College the degree of LL.D. was conferred upon Dr. Alfred A. Woodhull of the Army Medical Corps, and that of A.M. *honoris causa* on Dr. Austin Flint, Jr., of New York. Dr. Landon C. Gray, of New York, was given an honorary A.M. by Columbia College at commencement, June 13th.

DR. BILLINGS'S APPOINTMENT CONFIRMED.—The Senate of the United States, on June 16th, confirmed the appointment of Dr. John S. Billings to be Lieutenant-Colonel and Deputy Surgeon-General of the United States Army.

A NEW PROFESSORSHIP FOR NORTHWESTERN UNIVERSITY.—Dr. William Deering, of Chicago, has given to Northwestern Medical School the sum of \$50,000, to found a professorship to bear the name of Dr. N. S. Davis, who has been a life-long friend of the donor.

RECENT APPOINTMENTS AT JEFFERSON MEDICAL COLLEGE.—At a recent meeting of the Board of Trustees of Jefferson Medical College, Dr. W. Joseph Hearn was elected Clinical Professor of Surgery; Dr. Edward P. Davis, Clinical Professor of Obstetrics; and Dr. S. MacCuen Smith, Clinical Professor of Otolaryngology.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The Forty-third Meeting of the American Association for the Advancement of Science will be held in Brooklyn, N. Y., from August 15 to 24, 1894, under the presidency of Dr. Daniel G. Brinton.

DR. LANPHEAR'S REMOVAL TO ST. LOUIS.—Dr. Emory Lanphear has resigned the chair of Operative and Clinical Surgery in the Kansas City Medical College to become Professor of Surgery in the St. Louis College of Physicians and Surgeons.

A NEW DEPARTURE IN MEDICAL LITERATURE.—The first number of *Teratologia*, a new medical quarterly, has just been issued in Edinburgh, under the editorship of Dr. J. W. Ballantyne. Its pages will be devoted exclusively to the subject of antenatal pathology.

PROFESSOR CZERNY AND THE PROFESSORSHIP OF SURGERY AT VIENNA.—Professor Czerny is reported to have refused to be made Professor of Surgery at Vienna because of the inadequacy of the laboratory equipment of the hospital.

"BIRTHDAY" KNIGHTHOOD FOR PHYSICIANS.—In the distribution of honors on her seventy-fifth birthday, Queen Victoria conferred knighthood upon Dr. J. C. Bucknill, F.R.C.P., F.R.S., Mr. F. S. Haden, F.R.C.S., and Dr. T. Grainger Stewart, F.R.C.P., Edin., Professor of Physics in the University of Edinburgh. Of these and several others, Dr. Stewart's is said to be the only one purely medical in origin.

MAGISTRACY, MEDICINE AND MALINGERING.—The special usefulness of a medical magistrate is reported from England. A workhouse inmate was arraigned before a medical J.P., charged with refusing to work, to which he pleaded that he was a victim of heart disease, whereupon the magistrate promptly descended from the bench, produced a stethoscope, auscultated the culprit, and re-ascending the throne of justice, sent him "up" for seven days for malingering.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, June 20, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious diseases: diphtheria 43, scarlet fever 59, measles 12, typhoid fever 9.

HARVARD MEDICAL ALUMNI ASSOCIATION DINNER.—The fourth annual dinner of the Harvard Medical Alumni Association will be held at the Hotel Vendome on Tuesday, June 26th, at one P. M. The guests will be Dr. W. M. Polk, of New York, Dr. W. W. Keen, of Philadelphia, Dr. William Osler, of Baltimore, and Deputy Surgeon-General John S. Billings, of Washington.

COLLEGE OF PHYSICIANS AND SURGEONS.—The commencement exercises of the College of Physicians and Surgeons of Boston were held in the Y. M. C. A. Hall on Wednesday afternoon, June 20th.

A LABORATORY COURSE IN BACTERIOLOGY AT THE YALE MEDICAL SCHOOL.—A six-weeks' course in bacteriology is to be given at the Yale Medical School commencing June 20th.

THE MAINE MEDICAL ASSOCIATION.—The Maine Medical Association held its annual meeting at Portland, last week.

NEW YORK.

MORTALITY.—The recent hot weather has had the effect of augmenting to some extent the weekly mortality of the city. During the week ending June 16th there were reported 841 deaths, which represents an annual death-rate of 22.45 per thousand of the estimated population; an increase of nearly three per cent. over the previous week. The principal increase was in diarrhoeal diseases, and there were also three deaths by sunstroke.

COLUMBIA COLLEGE COMMENCEMENT.—On June 18th the annual commencement of Columbia College was held at Carnegie Music Hall, and the degree of M.D. was conferred upon 120 graduates of the Medical Department, the College of Physicians and Surgeons. The Hippocratic oath was administered to the class by Dr. James W. McLane, the President of the latter. The alumni fellowship in anatomy was awarded to Dr. F. J. Brockway, in physiology to Dr. R. J. Cunningham, and in pathology to Dr. W. S. Stone; and Dr. Ira T. Van Giesen received the Alonzo Clark scholarship. The degree of A.M. was conferred upon Dr. Landon Carter Gray.

STERILIZED MILK FOR THE POOR.—Mr. Nathan Strauss has been enlarging the field of his depots for the supply of sterilized milk and other food for infants and young children at the lowest possible prices by issuing blanks, (which have been distributed to the police stations and dispensaries) which, when signed by any reputable physician, will enable parents, too poor to pay at all, to secure these supplies free of charge. In addition, he has secured permission from the Park Commissioners to have pure milk sold at the low rate of one cent a glass in the various parks of the city.

DEATH OF A PHYSICIAN FROM DRUGS AND SEPTICÆMIA.—A physician, Dr. Frank W. Carmon, thirty-five years of age, recently fell a victim to his inordinate craze for drugs. It is stated that he had long been a great sufferer from rheumatism, and in order to relieve the pain used morphia freely, and became addicted to the opium habit. After a time he also took larger quantities of chloral, paralydehyde and other hypnotics, and a few days before he died, he is said to have swallowed about an ounce and a quarter of paralydehyde at a single dose. Yet the next day he had sufficiently recovered from its effect to go out. It was at first supposed that he had died of morphia poisoning, but the coroner's investigation showed that death was in reality due to septicæmia resulting from the excessive use of the hypodermic syringe. Both the arms, from the shoulders to the wrists, were in a state of violent inflammation. Dr. E. R. Squibb, of Brooklyn, mentions a case reported by Dr. T. Mackenzie, of Douglas, Isle of Man, in which a patient recovered, after thirty-four hours of sleep, from a dose of three and a half ounces of paralydehyde.

Miscellany.

THE INFLUENCE OF ODORS ON THE VOICE.

THE subject of smells seems at present to be most passionately studied by French writers. We have recently been shown the psychological influence of smells on character and morals, as evidenced by M. Zola; and now another writer, M. Joal, has published a volume upon "Odors and their Influence on the Voice." That various odors may affect the voice is well known among singers, who consider the violet to be especially detrimental to a clear voice. A story is told of an envious soprano who sent her unsuspecting rival a large corsage bouquet of violets, and thereby caused her failure in a brilliant part. Now M. Joal rejects the idea that the odor of violets prevents a free vibration of vocal cords, which are unaffected by roses. "It is not a property of any particular perfume, but is wholly a question of individual susceptibility. One person may be unaffected by flowers, musk, civet or various toilet perfumes, but becomes at once hoarse and oppressed on perceiving the odors of oils or fats.

"It is difficult to offer any explanation of these vagaries which we must be content to call olfactory idiosyncrasies. There is no doubt, however, that odors may cause vocal disturbances, especially in persons of nervous temperament."

ST. LOUIS AND ITS MEDICAL SCHOOL.¹

PROFESSOR W. S. CHAPLIN, Chancellor of Washington University, St. Louis, in a recent address, gave the following explanation of the present condition of medical education in St. Louis:

"Don't think for a minute that these many medical schools in the West have been established for purely pecuniary reasons. The doctors do not make enough out of them certainly to pay for the work which they put into them. They might make more money, probably, by sawing wood the same amount of time. They do it in order to establish themselves as specialists. They have no other reason. Is this not a case where you have put on too much restriction in one direction? And that has produced an abnormal growth in another direction. If you look into the history of these medical schools, you find that there was a time when there was but one medical school. Some fifty years back, in St. Louis, I believe, there was just one. Then, by a process which the naturalists understand perfectly, by the growth of a kind of septum across the medical school, suddenly there were two medical schools, equipped fully, and those two medical schools were running in the most violent opposition. Here, in the East, I understand the medical profession have none of these differences and troubles, but in the West every medical school means a new set of mutual admirers. The professor of ophthalmology sends all his cases of surgery to the surgeon who is connected with his medical school. Go into St. Louis to-day, and you find just eleven sets of men who generally recommend and send all their patients to the men connected with their own schools. I do not despair of medical education in the West. I hope there will be constant and rapid deaths among the medical schools. The condition is certainly a disgusting one when viewed from the point of education."

¹ Medical Record, June 9th.

Correspondence.

[Special Correspondence.]

LETTER FROM SAN FRANCISCO.

ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

SAN FRANCISCO, June 11, 1894.

MR. EDITOR:—The American Medical Association has had its meeting and adjourned, or as the daily papers here express it, "The Medicos have gone and Odd Fellows' Hall no longer shivers with the echoes of comminuted fractures and the creaking of tubercular joints."

The regular reports of the meeting you have already had. While living quietly on milk and seltzer and thinking of the gastronomic glories of the recent past, it occurred to me that your readers might enjoy a bit of gossip about the social side of the convention. It was extremely social! The hospitality was generous and constant, and even when making allowance for Californian fondness for florid expression, the newspaper accounts were but just.

The first "feast and frolic" was a banquet tendered the American Medical Editors Association by Mr. R. E. Queen, on Monday evening, before the Congress met. Nearly two hundred guests were present. Dr. I. N. Love acted as toast-master, while Dr. Hughes made his usual speech to his "fellow cranks." The papers reported that "it was long after midnight when the last 'cat died,' and although the electric lights were out for a few minutes, neither the brilliancy of the wit nor the sparkle of conversation was dimmed for one moment."

The same evening a reception was held by the Committee of Arrangements in the Rotunda of the Palace Hotel.

On Tuesday evening occurred the great reception of the San Francisco County Medical Society. I quote: "Over five hundred ladies and gentlemen, nearly all of whom appeared in full evening dress, were present. The ladies, without exception, appeared in elegant toilets, lending to the scene charming grace and vivacity. The greater number were visitors from the East, and all expressed themselves in the highest terms of praise at the magnificent reception tendered them. Refreshments were served at ten o'clock. Liquid refreshments were served at the buffet in the vestibule throughout the entire evening."

On Wednesday evening Dr. W. F. McNutt entertained the Association with great hospitality. About six hundred persons were present. "Many, after paying their respects to the host and hostess and strolling around engaging in social converse, departed, but the majority remained and partook of the generous hospitality extended to the fullest extent. The toilets of the ladies present were elegant in every respect, and were only rivalled by the beauty and vivacity of the wearers of them."

The same evening a large reception was given by Dr. L. C. Lane at the new hospital of the Cooper Medical College; and it is probable that those who left Dr. McNutt's before supper were more eager to taste the bounties offered them at the College.

The ladies were given afternoon lunches and entertainments by Mrs. McLean and Mrs. Lane, and by Mr. Sutro at Sutro Heights, where they had an opportunity to see the "most sublime view in the world."

Many of the sections had dinners of their own; and the Obstetrical Section was banqueted by the Gynecological Society of San Francisco. Besides those already mentioned there were several private dinners. The meeting of the Medical Temperance Association, which was held on Thursday, was not largely attended.

The numerous boat-rides and excursions, the visits to the Mid-Winter Fair, and other attractions of the neighborhood—though tempting to the casual visitor—I did not attend. What little time was left from the sessions and the dinners was required for rest and gastric repose. Certainly the thousand guests of this Golden City of the West have reason to remember a most generous hospitality and welcome.

Yours truly,

S. F.

A QUALIFIED SIGNATURE TO THE REGISTRATION LAW.

BOSTON, June 18, 1894.

MR. EDITOR:—For any members of the State Society who do not wish to ignore their "license to practise," given to members by the act of incorporation, perhaps, as the present law reads, the best phrase, over their signature of registration, would be this, *reserving the claim of a right to practise, irrespective of registration*. Thus, it would seem, no one need have any objection to registering.

Yours very truly, J. L. W.

THE MEDICAL REGISTRATION LAW.

BOSTON, June 14, 1894.

MR. EDITOR:—A law, as now enacted by the General Court, which calls upon medical graduates of Harvard University, and others already legally licensed, and upon members of a medical society authorized to license, whose charter has not yet been repealed (if indeed it can be without its own consent), while it expressly excepts certain noted quacks and persons who practise "cosmopathic or any other method of healing"—such a law, some of us, young and old, are inclined to think a little *too utter* for an intelligent community. A clause above is italicized because it would seem to let in the whole crowd,—regulars, irregulars, one and all.

I suppose any one classed as a healer of any other method, may be entitled to subscribe himself,

Yours to register as, H. O. A. O. M. O. H.

¹ Thanks to Dr. Gay for his authoritative adoption of "practiser," the simple and correct form—"practitioner" being "an unlovely intruder." See "Words and Their Uses," by Richard Grant White, page 216.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 9, 1894.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York . . .	1,891,306	696	279	19.04	12.60	3.25	9.38	2.38
Chicago . . .	1,438,000	—	—	—	—	—	—	—
Philadelphia . . .	1,115,562	—	—	—	—	—	—	—
Brooklyn . . .	978,394	362	146	19.04	14.00	.66	9.24	.66
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	501,107	179	44	13.44	11.70	1.12	7.84	2.24
Baltimore . . .	500,000	—	—	—	—	—	—	—
Washington . . .	308,431	116	63	29.58	6.96	23.49	.87	—
Cincinnati . . .	305,000	93	24	9.72	9.72	1.08	2.16	1.08
Cleveland . . .	290,000	110	63	17.29	9.30	1.82	1.82	-2.73
Pittsburg . . .	263,709	—	—	—	—	—	—	—
Milwaukee . . .	250,000	—	—	—	—	—	—	—
Nashville . . .	87,764	37	10	10.80	16.20	2.70	—	2.70
Charleston . . .	65,165	39	13	17.92	2.56	17.92	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . . .	100,412	26	8	7.70	24.60	—	3.65	—
Fall River . . .	92,236	29	14	13.60	10.35	6.90	3.45	—
Lowell . . .	90,808	21	7	14.28	9.52	—	4.76	—
Cambridge . . .	79,611	20	9	30.00	15.00	5.00	5.00	20.00
Lynn . . .	65,124	14	—	—	—	—	—	—
Springfield . . .	50,285	15	4	6.66	20.00	6.66	—	—
Lawrence . . .	49,902	11	0	36.36	—	18.18	—	—
New Bedford . . .	47,744	22	8	4.56	9.10	—	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brookton . . .	33,939	5	2	20.00	10.00	—	20.00	—
Salem . . .	33,155	11	2	—	9.09	—	—	—
Haverhill . . .	32,925	10	1	—	—	—	—	—
Malden . . .	30,209	8	2	12.50	12.50	—	12.50	—
Chelsea . . .	29,606	—	—	—	—	—	—	—
Fitchburg . . .	29,383	10	4	—	10.00	—	—	—
Newton . . .	28,837	5	2	—	20.00	—	—	—
Gloucester . . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,961	10	8	—	—	—	—	—
Waltham . . .	22,068	8	3	—	—	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . . .	18,802	—	—	—	—	—	—	—
Everett . . .	16,665	4	1	—	—	—	—	—
Northampton . . .	16,381	3	1	—	33.33	—	—	—
Newburyport . . .	14,073	7	0	—	14.28	—	—	—
Amesbury . . .	10,920	0	0	—	—	—	—	—

Deaths reported 1,899; under five years of age 716; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhoeal diseases, whooping-cough, erysipelas and fever) 327, acute lung diseases 245, consumption 229, diphtheria and croup 126, diarrhoeal diseases 73, scarlet fever 33, measles 23, whooping-cough 23, erysipelas 13, typhoid fever 13, small-pox 10, cerebro-spinal meningitis 8.

From measles Brooklyn 10, Cleveland 7, New York 6. From whooping-cough Brooklyn 7, New York 5, Washington, Cincinnati and Cleveland 3 each, Boston 2. From typhoid fever Brooklyn, Washington, Cincinnati and Nashville 2 each, New York, Cleveland, Lowell, Somerville and New Bedford 1 each. From small-pox New York 7, Brooklyn 2. From cerebro-spinal meningitis New York and Lawrence 2 each, Washington, Worcester, Lowell and Lynn 1 each. From malarial fever Brooklyn 7, New York 3, North Adams 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,412, for the week ending June 2d, the death-rate was 17.0. Deaths reported 3,403: acute diseases of the respiratory organs (London) 222, measles 240, whooping-cough 112, diphtheria 53, scarlet fever 40, diarrhoea 36, fever 26, small-pox (London 4, West Ham and Birmingham 3 each, Liverpool and Bradford 1 each) 12.

The death-rates ranged from 13.6 in Bristol to 30.0 in Wolverhampton; Birmingham 17.2, Bradford 16.8, Cardiff 18.9, Gateshead 17.3, Hull 14.0, Leeds 17.4, Leicester 13.8, Liverpool 20.0, London 16.4, Manchester 19.6, Newcastle-on-Tyne 16.8, Norwich 18.8, Nottingham 19.4, Portsmouth 14.6, Preston 13.6, Sheffield 16.3, Sunderland 20.3.

METEOROLOGICAL RECORD.

For the week ending June 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.			
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.				
S. 3	29.68	62	70	56	72	63	62	S.W.	W.	9	10	C.	C.	0.14	
M. 4	29.66	70	82	57	63	36	50	S.W.	W.	14	12	F.	C.		
T. 5	29.82	57	60	54	52	67	60	E.	S.E.	6	5	O.	C.		
W. 6	29.81	56	65	47	59	65	62	N.W.	S.W.	14	11	O.	O.		
T. 7	29.78	56	60	51	74	55	64	N.	W.	10	12	O.	C.		
F. 8	30.02	60	73	48	44	44	44	W.	W.	9	8	C.	O.		
S. 9	30.07	68	82	55	50	39	44	W.	N.W.	15	4	C.	O.		

* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 9, 1894, TO JUNE 15, 1894.

FIRST-LIEUT. DRANE C. HOWARD, assistant surgeon, is relieved from duty at Fort Buford, North Dakota, and will report in person to the commanding officer, Fort Snelling, Minnesota, for duty at that station.

The following named officers, having been found by Army retiring boards incapacitated for active service on account of disability incident to the service, are, by direction of the President, retired from active service: LIEUT.-COL. SAMUEL M. HORTON, deputy surgeon-general; CAPTAIN MARCUS E. TAYLOR, assistant surgeon; CAPTAIN WILLIAM G. SPENCER, assistant surgeon.

PROMOTIONS.

FIRST-LIEUTS. PHILIP G. WALES and BENJAMIN L. TEN EYCK, assistant surgeons, to be assistant surgeons with the rank of Captain, June 7, 1894, after five years' service, in conformity with the act of June 23, 1874.

APPOINTMENTS.

DRS. J. G. MUMFORD, W. A. BROOKS and C. A. PORTER have been appointed surgeons to out-patients at the Massachusetts General Hospital.

RECENT DEATHS.

JAMES EDWIN WALKER, M.D., M.M.S.S., died in Brookline, Mass., June 15, 1894, aged sixty-two years.

DR. MIDDLETON MICHEL, of Charleston, S. C., died in that city, June 4th, aged seventy-two years. He was a graduate of the Medical College of South Carolina and at one time Associate Editor of the *Charleston Medical Journal*.

ELIJAH S. ELDER, M.D., President-elect of the Indiana State

Medical Society, died in Indianapolis, May 19th, aged fifty-three years. He was a graduate of the Medical College of Ohio and of Bellevue Hospital Medical College. In 1890 he was chosen Dean of the Medical College of Indiana.

AUGUST KUNDT, Director of the Physical Institute of the University of Berlin and the successor of Von Helmholtz, died recently, aged fifty-five years.

DR. WILLIAM FROST CUNNINGHAM, formerly of Charlestown, died in Leamington, England, June 5th, aged thirty-five years. He was a graduate of the Harvard Medical School, class of 1881.

DR. SPERK, the Director of the Imperial Institute of Experimental Medicine in St. Petersburg and a syphilologist and dermatologist of high repute, died recently. For twenty-one years he was chief physician to the Kalinkin Hospital in St. Petersburg. His best known works are those on "Prostitution and Prostitutes."

BOOKS AND PAMPHLETS RECEIVED.

A Contribution to the Study of the Physiological Actions of Sparteine. By David Cerna, M.D., Ph.D. Reprint. 1894.

Myxodema, Acquired and Congenital, and the Use of the Thyroid Extract. By George W. Crary, M.D., of New York. Reprint. 1894.

Brain Surgery, with Report of Nine Cases. Surgical Clinic, given at Wesley Hospital, March 31, 1894. By F. C. Schaefer, M.D. Reprints. 1893-94.

De l'Hydronephrose Intermittente. Par le Docteur Lucas-Championnière, Chirurgien de l'hôpital Saint-Louis. Paris: Coccoz, Libraire-Editeur. 1892.

A Case of Primary Tuberculosis of the Laminæ and Spinous Processes of the Vertebral Column. By John B. Roberts, M.D., of Philadelphia. Reprint. 1894.

Tumor of the Brain Simulating a Vascular Lesion; to which is added an Account of the Autopsy, with Remarks. By J. T. Eskridge, M.D., of Denver, Col. Reprint. 1894.

Recent Studies in Naupathia, or Seasickness, Symptomatology, Diagnosis, Pathogenesis and Treatment by a New and Efficacious Method. By Winslow Warner Skinner, M.D. (Par.) Reprint. 1894.

Sur la Cure Radicale des Hernies. Série Nouvelle de 116 Cas, Complétant un Total de 391 Cas, Mémoire présenté à l'Association pour l'avancement des Sciences à Besançon. Par le Dr. Just Lucas-Championnière. Paris: Coccoz, Libraire-Editeur. Reprint. 1894.

Zur Lehre von der Entwicklung des Beckens und Seiner Geschlechtlichen Differenzierung. Inaugural-Dissertation zur Erlangung der Doctorwürde einer Hohen Medicinischen Facultät der Universität Bern. Vorgelegt von Moses Konikow, Aus Zarizin (Russland). Reprint. 1893.

Surgical Shock. Procidencia Uteri. Profuse Menstruation. The Perfect Needle-Holder. A New Uterine Curetting Forceps. Acute Puerperal Cellulitis and True Pelvic Abscess. A New Method of Examining the Kidney, Especially for Stone. By Charles P. Noble, M.D., Philadelphia. Reprints. 1894.

Practical Lectures on Dermatology, Comprising a Course of Fifteen Lectures delivered at the University of Vermont Medical Department, during the session of 1892-93. By Condict W. Cutler, M.S., M.D., Professor of Dermatology, University of Vermont Medical Department, etc. New York: G. P. Putnam's Sons. 1894.

Rotura de la Uretra por Estrecheces; Abceso Urinario y Gangrena del Escroto; Pérdida de Cinco Centímetros de Uretra; Uretrotomía Interna, por la Electrolisis—Curación. Por el Dr. Ramon Martín Fil, Médico-director del Hospital Noble de Málaga. Barcelona: Establecimiento Tipográfico de Amat y Martínez. Reprint. 1894.

Further Remarks on the Occurrence of a Form of Non-Albuminous Nephritis other than Typical Fibroid Kidney. A Serious Fallacy Attending the Employment of Certain Delicate Tests for the Detection of Serum-Albumin in the Urine, Especially the Trichloroacetic Acid Test. By D. D. Stewart, M.D., Philadelphia. Reprints. 1894.

Pathological Notes on Two Pedunculated Tumors. Three Specimens of Tumors of the Heart: Metastatic Carcinomatous Nodule in the Myocardium; Implantation Sarcoma of the Right Ventricle; Primary Round-Cell Sarcoma of the Epicardium. A Specimen of Four Healed, Ascending, Ileal Invaginations, Symmetrical and Equidistant. By Ludvig Hektoen, M.D., of Chicago. Reprints. 1893.

The Relation of the Patellar Tendon-Reflex to some of the Ocular Reflexes found in General Paralysis of the Insane. A Series of Wools for the Ready Detection of "Color Blindness." Clinical History of a Case of Spindle-Cell Sarcoma of the Choroid, with a Study of the Microscopic Condition of the Growth. By Charles A. Oliver, M.D., of Philadelphia, Pa. Reprints. 1893.

Address.**THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.¹**

BY REGINALD H. FITZ, M.D., BOSTON.

(Continued from No. 25, p. 613.)

THUS, at the present time, there are laws intended to regulate the practice of medicine to a greater or less extent in all the States of the Union, except in Massachusetts and New Hampshire.

The requirements of these laws vary within very wide limits. Rhode Island merely demands that the name and residence shall be recorded in the town clerk's office. In Maine and Wisconsin the physician cannot recover compensation unless he has a medical degree from a public medical institution in the United States, or a license from the State Medical Association, or, in Maine, a certificate of good moral character from the town authorities. The simple registration of the diploma or license suffices in Arizona, the District of Columbia, Georgia, Idaho, Indiana, Kentucky, Louisiana, Michigan, Nebraska, Nevada, South Carolina, South Dakota, and Wyoming. The possession of a diploma or a certificate of qualification from a State or County Medical Society is sufficient in Kansas and Ohio.

The diploma must be verified by boards of examiners in California, Colorado, Connecticut, Delaware, Iowa, Montana, New Mexico, Oregon, South Carolina, Tennessee, Vermont; by boards of health in Illinois, Kentucky, Louisiana, Missouri, Nebraska, Oklahoma, South Dakota, West Virginia. They are only approved when representing certain periods of study in Maryland, Minnesota, Montana, Nebraska, New York, New Jersey and North Dakota.

Candidates who have no diploma are required to pass an examination in Alabama, Arkansas, Colorado, Connecticut, Delaware, Missouri, Montana, New Mexico, North Carolina, Oklahoma, Illinois, Iowa, Oregon, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia.

Examinations are the sole qualification for license in Florida, Maryland, Minnesota, Mississippi, New Jersey, New York, North Carolina (except for graduates prior to 1880), North Dakota, Pennsylvania, Utah, Virginia and Washington.

The effect of these laws also is extremely various. In Arkansas, California, Florida, Georgia, Ohio, South Carolina and Texas the laws are said to be either unworthy of the name, contain glaring defects, are of low standard, unsatisfactory or practically inoperative. Even in North Carolina the law is defied with impunity. On the contrary in Alabama, Minnesota and Virginia, the laws are almost ideally perfect. In New York the promise has been more than fulfilled. More and more support is being given to the law in West Virginia, while in Illinois, Indiana, Iowa, Kentucky and Missouri the laws are efficient, salutary, working well, or meeting with general favor. In New York the number of physicians entering practice has been diminished, and the quality has been improved. Of 327 candidates in 1892, 267 fulfilled the requirements, of whom 244 were regulars, 17 homœopaths and six eclectics. In Indiana 559 practitioners left the State;

in Kentucky 400 or 500, and 250 in Minnesota, during the year 1885.

A conspicuous effect of these laws has been seen in the improvement of the standard of medical education. To them, more than to any one cause, is due the difference which exists between the condition now and in 1870. In Alabama, Colorado, Connecticut, Illinois, Nebraska, Oregon, South Dakota and Washington, at least three full courses of five to six months each, no two in the same year, are demanded. The State of Oregon, after 1898, will require four courses of six months each from physicians who wish to practise in that State. There is not only a prolongation of the period of study as the effect of these laws, but there is also an increased demand for a preliminary education, the establishment of new professorships, and more exacting examinations for the degree. Of all agents distinctly bringing about this change, the Illinois State Board of Health, and especially its secretary, the late Dr. John H. Rauch, deserve the highest consideration.

Let us now consider the recent efforts in Massachusetts. In the address, previously referred to (p. 611), it is stated that all laws relating to the licensing of physicians by the State of Massachusetts were stricken from the statutes in 1859. The influence of the homœopaths in bringing about this result was obvious, but a number of them still retained their membership in our Society. They were inoffensive, but the feeling against homœopathy was so strong in the minds of certain members that, in 1870, a protest was made by some of the latter against the admission to the American Medical Association, then meeting in Washington, of delegates from the Massachusetts Medical Society. The Association voted, in effect, "that the Massachusetts Medical Society voluntarily and improperly furnishes shelter and gives countenance to irregular practitioners to such an extent as to render it unworthy of representation in the General Assembly of American Physicians."⁴³

At the annual meeting of our Society, May 24, 1870, the following vote, "amid much confusion," was passed:

"Resolved, That the Massachusetts Medical Society hereby expels from fellowship all those who publicly profess to practise in accordance with any exclusive dogma, whether calling themselves homœopaths, hydropaths, eclectics, or what not, in violation of the code of ethics of the American Medical Association."⁴⁴

This vote, however, had no legal force, since no member could be expelled except after a trial in conformity with the by-laws. But Dr. Cotting, at the Councillor's meeting, June 6th, 1871, offered the following preamble and resolutions, which were adopted by the Council, and on the following day by the Society:

"Whereas, The Massachusetts Medical Society has always endeavored to make, as its charter emphatically enjoins, 'a just discrimination between such as are duly educated and properly qualified for the duties of their profession and those who may ignorantly and wickedly administer medicine,' while at the same time it has ever acted in accordance with the 'liberal principles' of its foundation, and shows itself ready to examine and to adopt every suggestion, from whatever source, promising improvement in the knowledge and treatment of disease;

¹ The Annual Discourse before the Massachusetts Medical Society delivered June 13, 1894.

⁴³ Proc. Mass. Med. Soc., 1871, 204.

⁴⁴ Loc. cit., 1870, 159.

"And, whereas, It is alleged that some of its Fellows, in opposition to the spirit and intent of its organization, consort, in other societies or elsewhere, with those whose acts tend 'to disorganize or to destroy' the Society;

"Therefore, resolved, That if any Fellow of the Massachusetts Medical Society shall be or shall become a member of any society which adopts as its principle in the treatment of disease any exclusive theory or dogma (as, for example, those specified in Art. I. of the By-laws of this Society), or himself shall practise, or profess to practise, or shall aid or abet any person or persons practising, or professing to practise according to any such theory or dogma, he shall be declared to have violated the By-laws of the Massachusetts Medical Society by 'conduct unbecoming and unworthy an honorable physician and member of this Society.' By-laws, VII., § 5.

"Resolved, In case the Society concur with the Councillors in the foregoing resolution, that the President of the Society shall appoint a committee of five Fellows (to hold office one year and until others are appointed) to bring before a Board of Trial any Fellow who, three months from this date or after, shall be found chargeable with the offence set forth in the foregoing resolution.

"Resolved, That, after concurrence by the Society, the foregoing preamble and resolutions shall be printed, and a copy sent to every Fellow of the Massachusetts Medical Society.

"Resolved, That a committee of three be appointed by the chair to report the action of the Councillors on the foregoing preamble and resolutions to the Society, to-morrow, for concurrence."⁴⁵

A board of trial was appointed; it reported in 1873, 1875 and in 1877, in each of which years a certain number of the homœopathic members were expelled until all were thus disposed of.

In the meantime, as already stated, successful efforts were being made to secure the legislative control of medical practice in various States. Their success depended upon the recognition of the principle that no attempt should be made to interfere with the chartered rights of existing medical societies. The action of our Society towards its homœopathic members was based on the view that their "conduct was unbecoming and unworthy an honorable physician." It, therefore, could not, then, consistently unite with the homœopathic society in favoring a law which should place both on the same level.

But the need of discriminating between educated and honorable physicians and the reverse was strongly felt by individual members of the Society, and the earlier attempts at securing legislation were initiated by them.

In 1877 a bill⁴⁶ was introduced by Mr. Ewing of Hampden, and was entitled "An Act to regulate the Practice of Medicine and Surgery in the State of Massachusetts." It provided that each and every existing chartered medical society shall elect censors, with authority to examine and license practitioners of medicine, surgery and midwifery. The license was to be valid for a year only, and was to be furnished on presentation of a medical diploma or satisfactory certificate of examination from an authorized board. The certificate of license was to be recorded by the county clerk, and might be revoked for cause. The penalty of practising without a certificate was from \$50.00 to \$100.00 for the first offence, from \$100.00 to \$400.00 for any subsequent offence, and fees for services rendered could not be collected by law.

This bill was intended to prevent the practice of

medicine by uneducated persons, without, however, establishing any common or definite standard, and required merely the verification of certificates. It was referred to the Committee on the Judiciary, who reported against the bill,⁴⁷ and it was rejected. A month later another bill, relating to medicine and pharmacy, was presented, and was referred to the next General Court.⁴⁸

In the following year the same bill was again brought before the Senate,⁴⁹ and was referred to the Committee on Water-Supply and Drainage. They reported, February 20, 1878, that it ought not to pass, and it was rejected. A similar bill⁵⁰ "to regulate the Practice of Medicine and Surgery in the City of Boston" was also referred to the Committee on Water-Supply and Drainage. The clause relating to the inability to collect fees by law was omitted. It was expressly stated that veterinary surgeons, exclusive practitioners of the Thomsonian or botanic system of medicine, clairvoyants or healing mediums, not assuming the title of doctor, physician, surgeon or midwife, persons practising gratuitously, and those not occupying an office or place of business for the practice or advertisement of medicine, surgery or midwifery in the city of Boston, were exempt from its provisions.

The practical effect of this bill was to limit the use of the title of doctor, physician, surgeon or midwife to persons of some degree of education, but the difference in standard might be extreme. It was less restricting than its predecessor. The committee reported leave to withdraw, but a minority recommended its passage. This bill also appears as House, No. 122, submitted in reply to a petition from the mayor of Boston, for an order relative to regulating the practice of medicine and pharmacy in the city of Boston. The same minority, as before, of the Committee on Water-Supply and Drainage, recommended its passage, but leave to withdraw was voted, March 15, 1878.

In 1880, Governor Long, in his inaugural address, stated that the necessity of protecting the community against medical impostors had been urged upon his attention, and he referred it to that of the legislature. At this time the health department of the American Social Science Association had its headquarters in Boston, and a number of the younger Fellows of the Massachusetts Medical Society were among its members. Through their initiative, a powerful effort was made in the name of the above association to secure a law to regulate medical practice. Dr. E. W. Cushing, of Boston, at a meeting of the Suffolk District Medical Society early in the year, explained⁵¹ the steps which had been taken and the provisions of the bill. He stated that it had been prepared after consultation with eminent lawyers and representative physicians. The experience of other States had been utilized in its preparation, and the final draft met with the approval of the leaders of the homœopathic and eclectic medical societies. It was supported by eminent citizens of Massachusetts in Boston and elsewhere. It provided for the appointment, by the Governor and Council, of a board of medical registration composed of eight physicians and one dentist. The former were to be selected from the incorporated medical societies of the State in proportion to the whole number of members

⁴⁷ Senate, No. 119.

⁴⁸ Senate Journal, 1877, 255.

⁴⁹ Senate, No. 67.

⁵⁰ House, No. 86.

⁵¹ Boston Medical and Surgical Journal, 1880, cli, 180.

⁴⁵ Proc. Mass. Med. Soc., 1891, 201-216.

⁴⁶ Senate, No. 46.

in each. This board was to examine, in medical subjects exclusive of therapeutics, applicants for a license to practise medicine, dentistry or midwifery. All members of the State medical societies incorporated at the time of the passage of the act were to be exempt from examination. Also all practitioners in the State, of one year's standing, having an approved diploma or license; all practitioners of good moral character and reputation having practised in the State for ten consecutive years; non-resident practitioners with an approved degree or license, and students of incorporated schools rendering gratuitous services. Licenses could be refused or revoked for cause. The penalty for practising without a license was a fine not exceeding five hundred dollars.

This bill was referred to the Committee on Public Health, which held six hearings, and reported "An Act relating to Practitioners of Medicine,"⁵³ providing that persons offering or advertising to practise medicine, surgery or midwifery, without a reasonable degree of learning, skill and diligence therein, shall be fined not exceeding five hundred dollars. Another provision was that persons professing to heal or cure disease in whatever manner, shall not assume the title of doctor, or of doctor of medicine, without having received the degree of doctor of medicine from a reputable chartered medical institution, under penalty of a fine not exceeding five hundred dollars. There were exempt from this provision persons who had used the title for ten years in the State, and members of any medical society of the State lawfully exercising the power to examine and approve its members before admission.

The bill was rejected by a very large majority in the House. This attempt of the Social Science Association to protect the community against medical impostors was defeated, according to Dr. Granger,⁵⁴ largely because of counter-petitions and complaints that the law was intolerant and exclusive, for the benefit of the few, and an interference with the rights of the many. The opposition was determined and powerful. It comprised some of the oldest and most honored physicians, many educated and intelligent citizens, all the quacks and their friends, and was supported by many newspapers, and advocated by eminent counsel.

In 1882, Governor Long, in his veto of the bill to "regulate the practice of dentistry," stated: "It would perhaps be better worth while to consider the expediency of a general statute to the effect that any person pursuing a business or profession without sufficient skill therein shall be punished. Such a statute, in the hands of judge and jury, would never work injustice, and yet would be ample for those exceptional cases of imposition, on the strength of which vicious special statutes are urged from year to year."

This suggestion from Governor Long was in harmony with the provision of the bill of 1880. It was eminently necessary in the practice of medicine, since at that time, the ruling of Chief Justice Parsons in the case of the Commonwealth v. Samuel Thomson was generally held to be sound law. As has already been stated,⁵⁵ this ruling was replaced in 1884 by that of Judge Holmes. It was urged by Mr. Benton, in his argument before the Committee on Public Health

in 1885, against the petition of the Massachusetts Medical Society for a law to regulate the practice of medicine, that the latter decision made further legislation unnecessary. He says:

"The present law is clear and ample. A man or woman who assumes to practise the healing art impliedly contracts that he or she has sufficient skill and knowledge to do the thing which they assume to do, to cure the disease which they assume to treat, and no other. And if he or she does not have it, they are liable in damages for all the consequences that result from the lack of knowledge and skill. If he or she is grossly or presumptuously ignorant and negligent, and a person is thereby killed or injured, he or she is liable for manslaughter or for assault."

Even with this interpretation of the law, the security to the public is insufficient. As has already been shown, the cases of imposition are not so exceptional as assumed by Governor Long, neither is the victim nor his or her friends always conscious of it or competent to judge of the skill or knowledge of the medical adviser. None are more aware of the defenceless state of the public in these respects than physicians.

The next attempt was made in the name of our Society. In June, 1884, on motion of Dr. H. O. Marcy, it was voted⁵⁶ that a committee be appointed by the President of the Massachusetts Medical Society to secure, if possible, an act to protect the people from ignorant and incompetent practitioners of medicine. A committee of sixteen was appointed, Dr. Townsend, of Natick, being the chairman. This committee was subsequently strengthened by the addition of Drs. G. C. Shattuck, Cotting, Lyman, H. W. Williams and Hosmer, as a special committee to aid that of the Society in its petition.

A hearing was given, lasting four days, was largely attended, and excited much public interest. It was shown as probable that there was in Boston, at the time, "greater ignorance and criminality, disguised under the name of the profession, than in any other city of the Union. Even houses of ill-fame are covered under the name of a physician."⁵⁷

The committee reported⁵⁷ June 3, 1885, "An Act to regulate the Practice of Medicine," but one member dissenting. It provided for a board of nine examiners, not more than four to belong to the same medical society or school of medicine, who were to register as qualified physicians all graduates of legally chartered medical colleges or universities having the power to confer degrees; also all practitioners of medicine of ten years' continuous practice in the State. All other applicants for registration were to be examined, and at the close of a year all applicants whatsoever were to be examined. The examination was to be elementary and practical, and to embrace the subjects of anatomy, surgery, physiology, chemistry, pathology, obstetrics and the practice of medicine, exclusive of therapeutics. Persons practising medicine or surgery without being registered were liable to a fine of not less than fifty nor more than five hundred dollars.

The bill was refused a third reading in the House by an overwhelming majority. According to the *Boston Medical and Surgical Journal*,⁵⁸ despite the origin of the movement at the annual meeting of the

⁵³ Senate, No. 198.

⁵⁴ Buffalo Med. and Surg. Journal, 1880-81, xx, 97.

⁵⁵ Page 291.

⁵⁶ Proceedings of the Massachusetts Medical Society, 1884, 68.

⁵⁷ Dunglison and Marcy, College and Clinical Record, 1885, vi, 223.

⁵⁸ House, No. 445.

⁵⁹ 1885, cxli, 203.

Society, and its advocacy, both by a general and special committee, "the sentiment of the great majority of the Society was one of entire indifference. But a small portion thought it worth while to put themselves on record at all."

Dunglison and Marcy state: "It was presented during the last hours of a heated, long drawn out political contest, when time could not be given for its proper consideration, and, loaded down with amendments offered for its destruction, it failed of passage."

Four years later the attention of the legislature was again called to this subject through the labors of Dr. J. Frank Perry, at the time editor of the *Journal of Health*. The draft of the bill then presented⁶⁰ required that licenses to practise should be given by the Board of Health to medical graduates of legally chartered colleges, to members of at least one year's standing of incorporated medical societies, and to practitioners who had been in practice for ten years. All other applicants were to be examined by the censors either of the Massachusetts Medical Society, the Homœopathic Medical Society or the Eclectic Medical Society, and the Board of Health was to license the successful candidates. Violation of the law was punishable with a fine not exceeding \$500.00, or imprisonment not exceeding six months. Three petitions were presented in favor of the object of this bill, and twenty-six against it.

The subject was referred to the Committee on the Judiciary, who reported, May 23, 1889, a bill⁶¹ entitled "An Act to Regulate the Practice of Medicine and Surgery." It provided that practitioners should file an affidavit of their qualifications with the city or town clerk, who should give a certificate stating the substance of the facts set forth in the affidavit, which certificate was to be conspicuously displayed in the practitioner's office. Violation of the provisions of this act was to be punished by a fine not exceeding one thousand dollars, or imprisonment not exceeding one year, or by both fine and imprisonment.

This bill was sent up for concurrence by a vote of eighty-two to fifty-nine, and was defeated in the Senate. Dr. Perry informs me that he used every effort to defeat this bill in the Senate, since he was determined to obtain a good bill or none at all.

In 1890 the attention of the legislature was again called to the subject by Dr. George S. Wilson, of Boston, representing the Working People's Aid Society, and other workingmen's organizations. The matter was referred to the Committee on the Judiciary, who reported it inexpedient to legislate.

In the following year Dr. Wilson succeeded in obtaining a hearing before the Committee on Public Health, and presented the draft of a bill "to establish the registration of Medical Degrees." No one was to use the title of "Doctor," or of "Doctor of Medicine," or any abbreviation thereof, unless possessing a diploma from some reputable college or institution legally empowered to confer the degree. At the end of the year, after the passage of the act, no medical college was to be considered reputable which required less than three years of medical study and three annual courses of lectures of not less than twenty weeks each. The penalty was a fine of \$50.00 to \$200.00 for the first offence, and from \$100.00 to \$500.00 for each

subsequent offence, or imprisonment from thirty to ninety days, or both fine and imprisonment.

The committee reported March 24, 1891, a bill⁶² entitled: "An Act to regulate the Practice of Medicine by the Registration of Practitioners," the provisions of which were similar to those of the bill reported in 1889. This bill was returned to the committee, slightly amended, and again reported April 7, 1891.⁶³ Dr. Wilson states that, in his opinion, the bill was so unsatisfactory to the working people, that he "went to the State House and saw several influential members, who succeeded in killing the bill." It was refused a third reading in the House by a vote of eighty-six to forty-two.

In the present year, Governor Greenhalge, in his address to the legislature, makes the following request: "64

"I ask you also to consider the expediency of requiring that practitioners of medicine be registered in somewhat the same manner as pharmacists are now registered. In every State of the Union, except five, such a system of registration has been established, and it cannot fail to protect the public, and at the same time help to maintain a high standard among medical practitioners."

Pharmacists are registered by a board of registration appointed by the Governor and Council. The candidate is examined, receives a certificate, if qualified, and the certificate must be conspicuously displayed in his place of business. Unregistered pharmacists transacting the business of pharmacy are punished by a fine not exceeding fifty dollars.

The above section of the Governor's address, also a bill to regulate the practice of medicine and surgery by the registration of practitioners,⁶⁵ were referred to the Committee on Public Health. They reported, three members dissenting, the bill⁶⁶ "to provide for the Registration of Physicians and Surgeons." This bill was essentially the same as the House bill (No. 445) of 1885, and corresponded very closely with the act of the same year to establish a Board of Registration of Pharmacy. As a substitute for this bill, Senator Kittredge offered another,⁶⁷ which is practically the bill recommended in 1889,⁶⁸ with a smaller penalty and a clause making it a misdemeanor to append, without authority, the letters M.D. to the name of the person. The committee's bill was advocated in the Senate by Dr. Harvey, and was passed to be engrossed; Mr. Kittredge's substitute being defeated by a vote of twenty-two to six. The bill⁶⁹ as passed by the Senate differs from the committee's bill, in containing, as amendments, a clause preventing more than three members of the board being at one time members of any one chartered State medical society; also that practitioners of three years' continuous practice before the passage of the bill should be entitled to registration; also, that all applicants with the degree of M.D. from a legally chartered medical college or university having the power to confer degrees in medicine in this Commonwealth shall be registered in the future without examination.

Finally, the bill was so amended as not to apply "to clairvoyants, or to persons practising hypnotism, magnetic healing, mind cure, massage methods, Christian science, cosmopathic or any other method of

⁶⁰ Boston Med. and Surg. Journal, 1885, cxlii, 203.

⁶¹ New York Medical Journal, 1889, xlix, 195.

⁶² House, No. 487.

⁶³ House, No. 292.

⁶⁴ House, No. 396.

⁶⁵ Address, p. 39.

⁶⁶ House, No. 137.

⁶⁷ Senate, No. 155.

⁶⁸ Senate, No. 178.

⁶⁹ House, No. 487.

⁷⁰ Senate, No. 263.

healing," provided such persons do not advertise or hold themselves out by the letters M.D., or the title of doctor, meaning doctor of medicine.

Senator Kittredge claimed that there were four thousand remonstrants against the bill, and none but doctors in its favor.⁷⁰

Some of the opponents of the attempt to secure the legislative control of the practice of medicine in Massachusetts have placed themselves on record in the public press. The personal characteristics of many of those present at the hearings have been thus described:⁷¹

"What a collection of them there was in the Green-room at first, and afterwards in the large hall of the House of Representatives, to which an adjournment was necessary on account of the crowds! Medical blacklegs of all kinds, deceitful clairvoyants, long-haired spiritualists, necromancers, wizards, witches, seers, magnetic healers, pain charmers, big Indian and negro doctors, abortionists, harpies who excite the fears and prey on the 'indiscretions' of the young of both sexes, who treat venereal diseases with the utmost secrecy and despatch, who have good facilities for providing comfortable board for females suffering from any irregularity or obstruction, who sell pills which they are very particular to caution women when pregnant against using; *et id genus omne*. Some of them looked sleek, well fed and prosperous; others seemed to have come from the very slums of destruction. Most of them had a coarse, animal, degraded look."

(To be continued.)

Original Articles.

CASES OF TRAUMATIC HEADACHE.¹

BY CHARLES F. FOLSON, M.D.

IN studying the various causes of headache, I have grouped together six similar cases due to traumatism, which I report to-day. Others, where the injury was to the nose, are not included, inasmuch as the cause of the symptoms in them was complex.

CASE I. C. H., aged seventeen years, with healthy antecedents, strong, well developed and nourished, and sensibly brought up, was referred to me in October, 1890, by Dr. Hasket Derby, who had carefully examined his eyes and found them without defect. Four years previous to my seeing him, he was thrown from a horse and struck by the freshly-shod hoof of another horse, over the upper and middle region of the left parietal bone. There was a large irregular cut in the scalp which bled freely and finally healed by granulation. There was no unconsciousness after the accident and there were no cerebral symptoms at that time.

A year later, he began to have headache now and then, which was not severe, but which, still a year later, had become very bad and more frequent. These headaches began just back of the left eye, a couple of inches anterior to the cicatrix, extended over the temporal region, and finally involved the whole head. They lasted several days and were quite disabling. They were not affected in a causative way by the use of the eyes. The headaches became more and more troublesome until the summer of 1890, when they were almost constant, although the boy was at the

time leading an outdoor life on a farm where he was passing his vacation. He made as little as possible of his symptoms, as he was very desirous of returning to school, which he did in October. He was not able to study and was sent back to me by his teacher as being in constant suffering. From his mother, whom I then saw for the first time, I learned that he had been obliged to give up the active occupations and amusements of boyhood, and walked about, and especially up and down stairs, with the greatest care in order to avoid the least jar, which made his head much worse. He could not study or read and there was no let-up to the pain which varied from time to time in degrees of severity. There had never been any convulsions nor vomiting.

Physical examination of the patient was negative, except that over the upper middle part of the left parietal bone there was an irregular cicatrix, quite tender on pressure, about an inch and a quarter long, and three-sixteenths of an inch wide at the widest part. The boy had the general appearance of health, except that his face usually had the expression of pain. He was unnaturally irritable, and disagreeable to himself and to others.

After four years of medical treatment, it did not seem wise to try that any further. I advised that the cicatricial tissue should be cut out and that trephining or further exploration should depend upon the indications—an opinion in which Dr. Weir Mitchell concurred after seeing the patient in consultation.

The operation was performed by Dr. Warren, October 29th, in the presence of Dr. Weir Mitchell, Dr. C. B. Porter and myself, but nothing was found to justify any apprehension of possible serious injury to the brain. There were three small indentations in the external table of the skull and trephining showed some reddening of the dura with adhesions to the adjacent bone. Dr. W. F. Whitney found, on microscopical examination, diffuse hyperostosis of the skull, and interstitial neuritis in the cicatrized tissue.

The patient made a complete recovery, has been able to resume his studies, and has remained entirely well.

CASE II. Miss —, aged twenty years, was seen by me in January, 1891, complaining of persistent dull headache, obstinate constipation which did not yield to ordinary remedies, and of paroxysms of severe pain throughout the head, with mental confusion beginning a few days before menstruation and lasting a week or more.

The patient's health had otherwise been excellent except for debility and some neurasthenic symptoms of three years' duration, which began a few months before the appearance of her headaches, and which had been attributed in part to worry and in part to a life involving some exposure on a cattle ranch in the West, with food not altogether suited to her somewhat exacting needs. She had lost twenty pounds in weight.

The family history was negative.

In July, 1884, the patient was kicked in the head over the upper and posterior portion of the right temporal bone by a well-shod horse. There was a large irregular scalp wound which got filled with sand and gravel. The wound was tied up and healed by granulation. There had been no unconsciousness or cerebral symptoms of any kind. There was no headache of consequence until nearly four years later, in 1888,

¹ Read at the meeting of the Association of American Physicians, Washington, D. C., May 29, 1894.

⁷⁰ Boston Daily Advertiser, April 18, 1894.

⁷¹ New England Medical Gazette, 18-0, xv, 65.

when she was again thrown from a horse and dragged about fifty feet, being debilitated at the time. She was also generally bruised about the same time in a third accident with a horse. Then severe and persistent headaches began, gradually becoming worse, and being at last completely disabling a few days before menstruation.

The more or less constant headache was quite moderate in degree and attended with slight mental confusion, which became quite marked at the time of the severe headaches of the menstrual period. There was also a degree of a peculiar motor aphasia at such times with hysterical symptoms, and there were often acts of cerebral automatism and attacks resembling petit mal.

After fourteen months of treatment the general health was restored, the constipation was relieved, and the persistent headache was somewhat better, but the paroxysmal attacks which have been described were not very much improved. There was nothing peculiar in the character of the headaches, which were general all over the head; and there was no tenderness in or near the cicatrix, which was irregular and ragged in shape, an inch and three-quarters long, and at the widest part nearly a quarter of an inch broad. It may be said in passing, that in this case and in the preceding case, the diagnosis had been made of *contrecoup* injury to the brain.

The cicatrix was removed by Dr. Warren in March, 1892, with complete relief to all the symptoms which I have enumerated.

Dr. W. F. Whitney found in the cicatricial tissue marked interstitial neuritis.

CASE III. F. R., aged eleven years, seen November, 1892, in consultation with Dr. V. Y. Bowditch; of neurotic temperament and family history.

In 1886 he was stunned by a fall, striking on a curbstone, with the result of a small scalp wound over the right frontal region about an inch above the supra-orbital ridge. In 1888 he was thrown from a small cart over a stone fence and was unconscious for a considerable time. There was a small scalp wound over the superior and posterior portion of the right temporal bone from this accident. In the same year he was partially stunned by being thrown from the rear platform of a street-car. His only serious illness had been intermittent fever in Italy.

Between two and three years after the second injury to the head he began to have persistent headache of slight degree, with frequent paroxysms of intense pain throughout the head. He lost flesh, became very thin and irritable, and had to give up study and reading. He also had frequent attacks of partial loss of consciousness, the precise nature of which I never ascertained. The only one which I saw resembled petit mal and probably was that. The eyes had been examined by an expert and found without defect. Medical treatment had been exhausted.

The two small, faint cicatrices were excised by Dr. Warren, November 23, 1892. The relief from the operation was not immediate, but gradual, and in a month's time the patient was virtually well in every respect. Two months later he was run over by a sled, the runner striking the upper cicatrix, and he was at about the same time accidentally struck a heavy blow over the other scar. There were pain and tenderness over both for three days, and the headaches returned, to be soon relieved by massage, and the patient returned to his school. A short time afterward

a new type of headaches appeared which were distinctly periodic and in part yielded to quinine, but which did not absolutely disappear until a re-examination of the eyes and the use of glasses for a trifling astigmatism.

Interstitial neuritis was found in the tissue of one scar by Dr. W. F. Whitney. There was considerable cell infiltration around the perineurium, as in the other cases.

These three cases were reported chiefly from the pathological point of view, and with illustrations of sections under the microscope, by Dr. Warren, at last year's meeting of the American Surgical Association.

CASE IV. Miss —, aged nineteen years, seen by me in February, 1891.

Family history good, except for recent alcoholism in one of the parents.

At the age of eleven years she struck her head violently against a spike, making a wound through the scalp which left an irregular, ragged cicatrix an inch long just to the right of the median line, and over the posterior portion of the parietal bone. Six years later the patient fell backward from a piazza eight feet high, striking the back of her head on a rock. She was unconscious for some time, and for several months there were pain and tenderness at the seat of the injury. There was no flesh wound.

Very troublesome headaches appeared a few years after the first injury, and were not increased after the second accident. They did not yield to treatment, and were so constant and severe that the patient had to give up school, and finally all mental work. The disability increased, and there had been for a year before I saw her a dull mental state, occasional mild melancholia, cataleptiform attacks and imperative conceptions, with a generally debilitated physical condition.

The patient was well developed; not well nourished; the internal organs and the eyes were free from disease or defect.

After trying medical treatment for four months without much benefit, except to make the physical state one of apparent health, I advised excision of the cicatricial tissue, which was done by Dr. Post, June, 1891. The result was entirely satisfactory in dispelling the headaches and all the morbid nervous and mental symptoms.

CASE V. W., aged thirteen years, was first seen by me in 1884. There was a neurotic tendency in the family, which his parents had tried to counteract by country life and sensible habits of living. The boy was physically strong, well formed, and with the external appearance of physical health.

Somewhere about 1880 to 1882 he had received three severe blows on the head, the precise dates of which could not be learned, in play with other boys. From two there was no indication as to the site of the injury. The third, from the corner edge of a hoe, left a ragged scar a little over an inch long over the upper and superior portion of the right parietal bone. I could not ascertain just when his headaches appeared, as the precise time had been forgotten, but it was some months after the injuries; and when I saw the patient they had become entirely disabling, so that the boy was obliged to give up the common occupations and amusements of his age. He was irritable to the last degree, with very little initiative or interest or power of self-control, timid and apprehensive. He

had frequent attacks of loss of consciousness, no one of which I ever saw, but which I supposed to be petit mal. A description of his various nervous and mental morbid symptoms, including a very curious type of topophobia, for the next six years, occupy many pages of my note-books.

Treatment for seven years under the most favorable conditions, the greater part of which was in the country under judicious direction, and away from home, was only disappointing in its results. Although there was some gain, the patient was a young man of twenty years, quite unable to take his part in the world in anything but the simplest vegetative life.

The cicatrized tissue was excised by Dr. Post, June, 1891. The headaches ceased at once, and all the other neurasthenic and mental symptoms almost as soon. The young man entered a large business house, in which he worked hard and has done well.

CASE VI. Miss —, seen in 1882, on account of frequent and severe epileptic convulsions. She was nineteen years of age, well developed, talented, accomplished, with a well-trained mind.

The family history was excellent.

Ten years before, when she was nine years old, she fell backward from a high swing and struck the back of her head violently on the ground. A few weeks later she began to have attacks of petit mal, which, as time went on, became more frequent, and in a few years there were also typical epileptic seizures, which occurred mostly at night or before breakfast in the morning. She had been under the care of the leading specialists in Boston and New York, and had been treated by Dr. Brown-Séquard. None of the treatment did any good, and some made her worse. After exhausting, as she supposed, the regular pharmacopœia, she was taking a proprietary medicine, which, on chemical examination, proved to be chiefly bromides; and while fully bromidized, she had more severe and more frequent attacks of epilepsy than ever before.

She had had for many years — none of the family could say how many — a persistent nagging headache, which had at last made her excessively irritable and difficult to get on with, although she was naturally most amiable.

Nothing abnormal was detected on physical examination. To bodily symmetry there was added a highly-trained, well-developed mind. No cicatrix was found, only a slight local tenderness on hard pressure.

The attacks of petit mal were often from twenty to thirty in twenty-four hours, and the grand mal once in a few weeks. After nine years of treatment the patient was, to all appearances, in a condition of blooming physical health. Very few people knew of her frequent attacks of petit mal, which were mostly in the morning, and of true epilepsy once in two to four months. The headache, chiefly in the back part of the head, persisted, and the patient had become more irritable and self-willed, more difficult to live with, in spite of greatly improved general health.

This patient, by the way, is the only one in my experience who has taken borax for a long period of years with greater benefit than from any other medicine.

The sensitive area, about as large as a silver half-dollar, remained just to the right of the median line and above the occipital protuberance where she struck when she fell, and where a marked unevenness could be felt on the outside of the skull.

It was thought that the conditions might be similar to what was found in the first case reported, and such proved to be the fact. The operation of trephining was done by Dr. Bradford, assisted by Dr. Monks and Dr. Brackett, in September, 1891. There was no distinct indication for opening the dura, and that was not done. The bone removed was quite irregular in thickness, but was, unfortunately, lost on the way to the pathologist.

As a result of the operation, the headaches quite disappeared, the attacks of both kinds have greatly diminished in frequency, and the irritability and impaired self-control are things of the past. The young lady's parents say that life with her is now a constant pleasure, and she herself takes her full part in social life, believing that, as she rather overstates the results, she has had a new life given her.

Observations might be made, and inferences could be drawn, and pathological theories and physiological speculations are possible on these cases, that would be interesting and perhaps instructive. But I have not had time to make them short, and you have not the time for me to make them long.

The symptoms described were evidently reflex and secondary for the most part. So far as they were direct, they were due to more or less extensive alterations in the nerve and to the existence of pressure.

TUMORS OF THE BREAST.

J. COLLINS WARREN, M.D.,
Professor of Surgery in Harvard University.

THE following cases are selected for the purpose of illustrating certain points in the diagnosis and treatment of tumors of the breast, and are presented as a contribution to the clinical study of disease of this organ which may prove of interest to the general practitioner.

They emphasize the importance of an early diagnosis and the necessity for the most radical type of surgical operation in cases of malignant disease. In spite of the greatly increased severity of the operation the percentage of mortality is constantly diminishing, owing to the improved technique, not exceeding at present 2%, and convalescence is rapid. There is little doubt also that the percentage of cases of permanent cure of cancer is steadily increasing under the present system of treatment.

MEDULLARY CANCER OF THE BREAST. — REMOVAL OF THE PECTORAL MUSCLES.

S. E., forty-five years old, having good general health, first noticed a lump in the right breast while bathing, on August 1, 1892. There was no pain or tenderness at that time. The breast was examined by Dr. Helen Morton on December 6, 1892, when a tumor of glandular outline was noticed in the right breast and below the nipple. There was no pain. The patient had, however, had some pain like that of writer's cramp in the right arm for two or three years. Menstruation had been more copious for the last two years, the intervals being shorter; the last one being only two weeks long.

The family history of the patient was good, there being but one suspicious case of malignant disease in the family, an aunt having died at about seventy years of

age with some abdominal disease thought to be cancer, though no autopsy was made.

I first saw the patient on December 27th, and on examination found a tumor in the outer hemisphere and considerable enlargement of the axillary glands.

The operation was performed on January 1, 1893. It consisted in amputation of the breast and a free dissection of the axilla, together with the removal of the greater portion of the pectoralis major muscle, and the whole of the pectoralis minor muscle. The wound was closed throughout by interrupted sutures, and healed by first intention except at one point, where a small abscess formed around a catgut ligature. The patient left St. Margaret's Hospital for her home two weeks after the operation, and the abscess healed soon after.

The following is the microscopical report of the specimen made by Dr. W. F. Whitney:

"The tumor of the breast of S. E. (St. Margaret's, January 1, 1892), was a soft medullary nodule, close to the nipple and lying deep in the breast tissue, its lower surface against the fascia, through which, however, it could not be seen to have broken.

"Microscopic examination showed it to be made up of large masses of very large epithelial cells, separated by a little fibrous tissue stroma. The axillary glands were large, but without any distinct nodules of new growth. The microscope showed, even in the smallest, a few scattered large epithelial cells mixed in with those of the glands proper.

"The diagnosis is medullary cancer, with secondary infection of the lymph-glands of the axilla."

The malignant character of the growth in this case, and the involvement of the glands of the axilla necessitating a careful dissection as high as the clavicle, rendered the prognosis extremely unfavorable, and a statement to that effect was made at the time. The patient, however, recovered her health and strength entirely after the operation, was able to visit the World's Fair and enjoy herself the following summer; and the report in answer to frequent inquiries from myself is that there has been no return of the disease up to the present time (May, 1894). The favorable result of the operation in this case would seem to be due in some measure to its radical nature. The necessity of such an operation was forced upon me at the time by the extensive infection of the breast, and the result has been a most encouraging one for cases of this class.

CANCER OF THE BREAST ORIGINATING FROM A CHRONIC MAMMARY TUMOR.

Mrs. F., fifty-one years old, was examined by me in June, 1893. Her father lived to be eighty-nine years of age, and died of cancer in the neighborhood of the eye. Her brother also suffered from a suspicious growth in the eyebrow, which was removed by me several years ago, and has never returned.

Before the patient's marriage, at the age of thirty, she had noticed a small lump in the lower, outer quadrant of the left breast, which had been regarded as a chronic mammary tumor. This had given her no trouble, although she had since passed through several confinements. No change was noticed in the tumor until about February, 1893, when it began to enlarge, and for two weeks before my examination it had involved the skin above it. At the time when I saw it there was a red lump involving the gland, slightly tender and communicating with a nodule in the right lower quadrant of the left breast. Glandular enlargement was felt in the axilla. The patient's general health had been good.

The operation was performed on June 12th, and a careful dissection of the axilla was made, with the removal of the breast, together with the fascia of the pectoralis major muscle. The muscles were, however, undisturbed. The wound was closed throughout by interrupted sutures, no drainage-tube being used, and it healed by first intention, the patient leaving St. Margaret's Hospital on June 30th.

"The specimen from the case of Mrs. F. showed a prominent nodule involving the skin, of a dark-reddish color, about the size of a small peach. Section through this gave a grayish opaque surface, gradually merging into a more whitish translucent one, in which were numerous irregularly shaped fissure-like openings. This latter portion was quite sharply defined from the rest of the breast tissue.

"Microscopic examination showed the soft growth beneath the skin to be composed of solid masses of epithelial cells separated by relatively narrow bands of fibrous tissue. The rest of the tumor into which this gradually passed was made up of a fibrous-tissue basis in which were portions of gland tissue, some markedly dilated in an irregular manner by in-growths of the connective tissue.

"The axillary glands were enlarged, and presented the same character as the soft growth first described.

"The case is one of a chronic intra-canalicular papillary fibroma, in one part of which a medullary cancer has developed." (W. F. Whitney.)

The patient made a good recovery from the effects of the operation, and was able to visit Chicago during the summer; but in the course of the autumn a cough developed, and the patient's strength slowly and gradually failed. Emaciation set in, and finally an examination about January, 1894, showed the presence of a small nodule in the outer portion of the cicatrix, and a marked dulness over the upper portion of the left lung. From this time on, the patient failed more rapidly, and died in March, 1894.

The origin of cancer from a benign tumor of this nature is undoubtedly rare. The fact, however, that malignant disease may develop from such a growth is a reason for operative interference, even in the mildest forms of this affection. In many cases of chronic mammary tumor appearing in young girls shortly after the period of puberty, I have advised non-interference, and have been able to follow the history of one or two such cases for a number of years, and have found that they have given no trouble whatever. After the experience in the above case, I should feel less disposed to give such advice in the future. Benign tumors of this nature may, however, take on a rapid growth early and assume a comparatively formidable size. Inasmuch as under these circumstances they may develop into a sarcoma attaining sometimes great size, and assuming a very malignant type, it is important that they should be removed without delay, as was done in the two following cases:

ADENO-FIBROMA OF THE BREAST.

Miss H., nineteen years of age, noticed a growth in the right breast in the upper and outer quadrant, in August, 1893. The tumor grew slowly at first, but, during the three months previous to my seeing it, had increased in size more rapidly. There is no history of any such tumors ever having been observed in any member of her family. The case was seen by me first in April, 1893. On examination, a nodular, well-defined growth, about the size of a small orange, was observed in the locality above mentioned. It was freely movable under the skin, but seemed firmly attached to the gland tissue. There was, however, a well-defined outline to the growth. There was no enlargement of the axillary gland.

The operation was performed during the same month, the tumor being dissected from its attachment to the mammary gland without difficulty; and the wound healed by first intention. An examination of the growth, by Dr. W. F. Whitney, showed the tumor to be an intra-canalicular papillary fibroma. Two or three small glands removed from the axilla were found to be simply hyperplastic. In response to a recent inquiry, the patient states that there has been no return of the growth.

The second case of this affection is the following:

Miss J., twenty-two years of age, consulted me in June, 1893, for a tumor of three years' duration in the right breast, in the upper and outer quadrant. The patient was a tall and slender person, but in good general health. There was no family history of any such growth. The case was in all respects similar to the one just reported, and microscopical examination showed the growth to be of the same nature. The wound healed by first intention, and the patient made a rapid recovery from the operation. In the early fall she was married. During the course of the winter she suffered from an attack of the "grip," which was followed by symptoms of pulmonary consumption, from which she died about the first of April, 1894. There had been no return of the tumor, and her breast had given her no trouble or inconvenience of any kind since the operation.

MEDULLARY CANCER OF THE BREAST. — OPERATION, INCLUDING REMOVAL OF THE PECTORAL MUSCLES.

M. F. M., fifty-two years of age, consulted me in March, 1894, for a growth in the upper hemisphere of the breast, which she thought had been growing for about three months. On close questioning, however, the patient remembered that she had occasionally felt a lump during the past year or so, which had subsequently disappeared. There was no history of any cancer in the family. Her general health was good, but she had not been strong, and had suffered from neuralgia in the arm, for which she had been under the treatment of Dr. J. J. Putnam for some time. The breast had given her some discomfort on arranging her dress, early in the autumn, and the presence of a lump was first definitely noticed early in December.

The operation was performed on February 3, 1894. The infiltration of the breast and axillary gland was found to be so extensive that it was thought desirable to remove the greater portion of the pectorales, major and minor. After the removal of these muscles, a nest of these glands forming a nodule the size of a pea was found just beneath the edge of the clavicle and beyond the apex of the axilla. The following is the report of Dr. W. F. Whitney:

"The specimen from the case of Mrs. M., received on March 3d, consisted of the breast and contents of the axilla.

"On the breast was a nodule the size of an English walnut situated just outside of the nipple, which was not retracted. The section surface of the growth was in general of a uniform grayish, slightly opaque aspect, with numerous yellow opaque dots and lines; the periphery passed into the adjacent fatty and fibrous tissue by an irregularly, slightly-retracting outline.

"Microscopic examination showed the growth to be made of solid masses of relatively large, irregularly-shaped cells, many of them extremely fatty degenerated. Between the masses was a fine vascularized stroma of connective tissue rich in round cells.

"The lymphatic glands from the axilla were enlarged from the size of a pea to that of a cherry, and were infiltrated with a new growth similar in gross appearance and microscopical structure to that of the breast.

"There was a wide margin of sound tissue about the tumor, and no evidence of disease was found in the muscle removed.

"The diagnosis is medullary cancer, with secondary growth in the lymph glands."

The nature of the growth and its extension close to the boundary line of the axillary space make the prognosis of this case (in spite of the radical nature of the operation) an unfavorable one. If there be a long period of immunity or a cure in this case, the fact that glands of considerable size were traced to the edge of the clavicle, would become a point of interest to the surgeon, as indicating that although the disease had made considerable progress up to this point, it need not necessarily have involved the lymphatic region beyond.

In making a diagnosis in the case of a growth in the breast, it is important to remember the earliest symptoms which enabled us to determine the presence of cancer. One of the most important of these — and perhaps the most frequent period in this part of the world — is the age which has been mentioned in the cases above quoted. The most frequent period commonly ascribed to cancer, is between forty and fifty years, but in my experience the most prolific years are from fifty to fifty-five. One point of value is the seat of the disease, which in cancer is more frequent in the upper hemisphere and in the outer hemisphere, the upper and outer quadrant being, therefore, the most frequent of all localities. The retraction of the nipple does not appear to be of much value as a symptom in the early stages of the disease, a time when an accurate diagnosis is of the greatest importance.

(To be continued.)

Clinical Department.

SURGICAL CASES.

REPORTED BY C. L. SCUDDER, M.D.

THE following operations were done by the Surgeons of the Staff on duty at the Massachusetts General Hospital on Tuesday, June 12, 1894, before the members of the Massachusetts Medical Society at the Annual Meeting. The operations were performed in Ward E, the abdominal and cerebral ward of the hospital, and in the public operating theatre.

CASE I. A man with fecal fistula. Operation by Dr. M. H. Richardson for closure of the fistula; end-to-end suture of the bowel; gauze drainage. Recovery.

The patient was a man thirty-one years old. Two years ago history of obscure abdominal trouble, which in October, 1893, was relieved by operation, with the immediate establishment of a fecal fistula. The fistula has been open to both feces and gas, although the rectum has been functionally active. The sinus leading to the bowel was dissected out; all cicatricial tissue removed from about the bowel; the intestine divided, and the ends united by an interrupted Lambert suture. Throughout the operation there was very great hemorrhage from the vessels in the cicatricial tissue about the fistula and the very large mesenteric veins. After suturing, a bit of gauze drainage was left projecting from the abdominal wound reaching to the wound in the intestine.

CASE II. Male. Recurrent sarcoma of the thigh. Amputation in the upper third of the thigh. Recovery.

The patient, aged thirty-two, entered the hospital in April, with a history of an injury ten weeks previously

to the left knee-joint. The region of the knee was greatly swollen and extremely sensitive.

An amputation was done by Dr. M. H. Richardson in the lower third of the thigh April 21, 1894.

Examination of the specimen demonstrated that it was a spindle-celled sarcoma. To-day the patient having recovered from the previous operation, and there being some recurrence in the stump, a reamputation was done in the upper third of the thigh. The bone was found healthy, but there was a general oozing from the stump, so that the permanent dressing was not applied until later in the day, primary dressing being a packing with gauze.

CASE III. Woman. Perinephritic abscess. Drainage. Recovery.

The patient, a woman thirty-one years old in July, 1893, had the following symptoms: frequent micturition and foul urine. Five months ago a swelling appeared in the right iliac fossa, accompanied with great loss of flesh and strength.

Examination finds in the lower half of the abdomen, on the right side, extending well into the right loin, a tumor. Fluctuation is obtainable from the right iliac region backward into the loin through the tumor.

Operation by Dr. M. H. Richardson. Incision from the tip of the last rib to the crest of the ilium obliquely towards the iliac crest. An abscess cavity was opened, from which a large amount of foul, thick, greenish pus was removed. A counter-opening was made in the right groin, and the cavity was well douched and drained by tube and gauze.

CASE IV. Woman. Epithelial growth of the leg. Amputation at junction of the middle and lower third of the thigh. Recovery.

The patient, a woman fifty years old, had had all her life ulcers of the leg, which had at times entirely healed. At present there is an ulcer in the middle third of the leg, with raised edges, and a base extending deeply to the bone. Microscopical examination by Dr. Whitney proved the ulcers to be malignant.

Operation by Dr. M. H. Richardson. Amputation of the thigh by antero-posterior flaps, about three and a half inches above the joint.

CASE V. Double ovariectomy.

The patient, thirty-five years old, and married, has one child five years old. Has been married twelve years, and during the past ten years has had some pain in the left side, together with a constant dragging feeling in the pelvis; leucorrhœa for years; has had recently chills and fever.

Examination finds a woman well-nourished. Vaginal examination finds the cervix and uterus in the middle line. The uterus is slightly retroverted; the left ovary is enlarged; both ovaries are prolapsed and held fixed by adhesions. The uterus is normal in size.

Operation in Trendelenberg position by Dr. F. B. Harrington. Incision in the linea alba. Uterus found retroverted; both ovaries prolapsed. Both ovaries removed; broad ligaments tied off with silk. Uterus was freed from adhesions, and brought up into the abdominal wound, and two silk sutures passed from the fundus of the uterus through the peritoneum and fascia of the interior abdominal wall. Abdominal wound closed.

CASE VI. Boy. Stone in the bladder. Litholapaxy. Recovery.

The patient, aged three years, was well until eight months ago, when he began to complain of pain in

both groins. Pain is intermittent—worse with micturition and upon running about—sharp in character. The child was treated by Christian scientists for four months without improvement! Pain is increasing in severity and frequency; micturition is frequent; and urine is now passed involuntarily. The child has a long prepuce.

Operation by Dr. F. B. Harrington. A stone was detected by sounding the bladder, and it was crushed by a small-sized lithotrite.

CASE VII. Old pelvic abscess. Abdominal section, with removal of the abscess wall by dissection through an abdominal incision.

Patient, a woman thirty-eight years old, came to the hospital with a pelvic abscess May 17, 1894. This abscess was opened anteriorly through the abdominal wall and through the vagina. Drainage by tube through the vaginal opening; this drainage appeared to be insufficient. It was thought wise to reopen the abdominal wound, and to dissect out, if possible, the sac of the abscess. The incision opened the abscess cavity, which was washed out clean, and the edges sutured together, thus preventing the abdominal cavity's infection by the foul abscess; and the section was carried around on either side of the abscess wall until a greater part of the wall was removed. Both Fallopian tubes were found enlarged and full of pus. Both tubes were freed from adhesions and removed. The cavity remaining was drained by iodoform gauze and a glass tube. Patient was in poor condition at end of operation, but has recovered well with no rise of temperature.

Dr. C. B. Porter showed a case of extreme interest and importance:

A fracture of the surgical neck of the humerus, complicated by dislocation of the head beneath the coracoid process of the scapula. The operation for reduction of the dislocated head of the humerus was done fifteen days after the accident.

The shoulder-joint was approached through a U-shaped incision through the deltoid muscle. The head of the bone was found out of the glenoid cavity. A drill-hole in the anterior surface of the head of the humerus was made allowing a blunt steel hook to be inserted into the bone. Traction was made by the hook outward, aided by pressure of the thumb, this reduced the head of the humerus into the glenoid cavity. The wound was closed in the soft parts, a sterile dressing applied, and the arm held fixed by a plaster-of-Paris dressing around the chest and shoulder. In five weeks the apparatus was removed in the day-time, and worn a short time longer at night only. Union was firm in five weeks.

Eight months after the operation: The motion in the dislocated shoulder is about perfect; the arm, the patient reports, is as useful as it was before the operation.

Dr. J. W. Eliot operated upon an acute appendicitis of four days' duration.

The patient had worked the day before the operation, but had much abdominal pain. The temperature was 99°, the pulse was 170. The abdominal wall was rigid, and there was pain in the right iliac fossa upon pressure. By an oblique inguinal incision the gangrenous appendix was found and removed. Pus was found free in the abdominal cavity. A counter-opening was made in the median line. Drainage with tube and gauze was made through both incisions.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

NINTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Continued from No. 25, p. 622.)

SECOND DAY. — WEDNESDAY.

DR. THEOBALD SMITH, of Washington, read a paper entitled

MODIFICATION, TEMPORARY AND PERMANENT, OF THE PHYSIOLOGICAL CHARACTER OF BACTERIA IN MIXED CULTURES.

An accidental contamination of a culture of the hog cholera bacillus with *Proteus vulgaris*, both probably inoculated together from the original material, gave rise to a remarkably rapid attenuation of the pathogenic bacteria. The symbiotic growth had lasted about three months before it was discovered. The attenuation showed itself when rabbits were inoculated into the abdomen. A prolonged disease associated with the eruption of pseudo-tubercles took the place of the usual inoculation disease. Subsequent trials with mixed cultures of *P. vulgaris* and hog cholera bacilli yielded the same result. The cultures of the former after repurification failed to destroy rabbits after subcutaneous inoculation.

An unexpected outcome of these observations was the return to a higher level of virulence of the hog cholera bacilli in pure agar cultures in every case. This return did not come at once after *Proteus* had been removed, but appeared in two cases nine months after the culture had been purified and grown on agar continuously.

Another result of these mixed culture experiments was the appearance of a series of varieties of the *Proteus* culture, all descended from one colony originally. Two of these corresponded closely with Hauser's *P. mirabilis* and *P. zeukeri*.

These marked changes in mixed cultures are suggestive when taken into consideration with the life processes of bacteria in the depths of the soil, especially in polluted soil in which the bacterial flora may be presumed to be most abundant and active. The possibility of an ectogenic development of the non-toxic species which act as true disease germs is made plausible and deserves further attention.

The method of mixed cultures may prove useful in obtaining different degrees of virulence of the same organism, so essential in the study of the relation between the host and the parasite, or, in other words, immunity.

DR. G. M. STERNBERG said that a few years ago bacteriologists were disposed to look upon cultures which showed small differences as being of different species. We now know that the colon bacillus, the typhoid bacillus and other organisms undergo various modifications. Liquefying organisms may fail to liquefy; phosphorescent bacteria may after a time fail to produce phosphorescence, and the pigment bacteria may fail to produce their pigment. Starting with pure cultures from the same source, we can get a large number of varieties. It is still to be decided whether any of these varieties do have permanent characters and fail to return to the original type.

Referring to the researches of Dr. Martin, reported

by Dr. Ernst, Dr. Sternberg spoke of the pathogenic power of a pseudo-tetanus bacillus which had been cultivated in the soil where the tetanus bacillus had previously been cultivated, and after being propagated through successive tubes, still killed animals with all the symptoms of tetanus. This fact corresponds with the results obtained by Dr. Martin in his inoculations with a particular bacillus obtained from the vaccine lymph. After several generations he still produced a typical vaccine vesicle. Whether his bacillus would continue to do so indefinitely is a matter to be determined by further experiment.

DR. WM. H. WELCH said it was well to bear in mind that nearly all of the artificial modifications produced by the action of different agencies on bacterial cultures are changes in function, and not morphological changes, and that the present tendency among biologists is to eliminate, so far as possible, in the classification of species, physiological properties. In these observations there is nothing that necessitates our supposing that these changes justify the recognition of anything more than races and varieties, and not of separate species.

Dr. Welch agreed with Dr. Smith as to the remarkable tenacity of the hog-cholera bacillus in its pathogenic properties. This is contrary to the statements of Selauder, and of Metchnikoff and others who have worked with the hog-cholera bacillus. Selauder claimed to increase the virulence of the hog-cholera bacillus so that it became a germ almost identical with that of ordinary rabbit septicæmia that would kill in twelve to eighteen hours. His work has been gone over repeatedly here, but without the same results. It is quite evident that these foreign observers are working with some different organism.

As to the lesions in the intestines of rabbits which Dr. Smith attributed to the attenuated bacillus, these same lesions have been found occasionally after inoculations with the ordinary hog-cholera bacillus.

The results obtained by Dr. Smith are very suggestive that the conclusions which we draw from experimenting with pure cultures are not exactly applicable to the real conditions as they exist in nature, where the different micro-organisms are associated in various ways.

DR. THEOBALD SMITH said that he had studied the typhoid-like lesions produced by hog-cholera, and had come to the conclusion that they can only be produced in two ways: either by an attenuation of the germ, or by an increase of the resistance of the animal.

DR. MEADE BOLTON, of Baltimore, then read a paper entitled

THE EFFECT OF VARIOUS METALS ON THE GROWTH OF PATHOGENIC BACTERIA.

Some metals seem to leave no influence upon the growth of the bacteria, while others have a more or less marked inhibitory action, as shown by a broader or narrower clear zone around the pieces of metal on plates otherwise crowded with colonies of bacteria.

Just outside the clear zone, whether this is broad or narrow, there is nearly, in every case, a zone of intensified growth where the colonies are thicker than on other parts of the plate.

In the few tests as yet made for this purpose, there was entire absence of living bacteria in the clear zones. Inoculations from the clear zones remained sterile.

In some cases there are three zones around the

metals, namely: a clear zone immediately surrounding the metal, a zone of intensified growth, and a second narrower zone where growth was inhibited.

It has been possible to detect in the medium, by chemical reagents, the presence of traces of those metals that exert inhibitory power.

The solution of the metals in the nutrient medium takes place independently of the growth of bacteria, as it is possible to detect the presence of the metals in sterile media in which they have been placed, after they have lain for a few days, at any rate. A discoloration of the medium surrounding the metal often makes a special test unnecessary.

Some metals have a much more powerful inhibitory action than others, as is shown by the broader clear zone. There is also some difference in the different bacteria with one and the same metal.

Some of the metals that have been tested were absolutely pure; others were commercial metals, marked chemically pure, and a few were either impure or alloys.

DR. W. H. WELCH said he was very familiar with the investigations of Dr. Bolton. The most mysterious thing about them is the clear zone outside of the intensified zone. The first clear zone immediately around the metal is unmistakably due to a solution of the metal in the form of oxide or salt. The most probable explanation of the intensified zone is that there is a minimum amount of metal there which is favorable to the growth of the bacteria, whereas the larger amount in the clear zone is a poison to the bacteria, and prevents their growth.

DR. W. GILMAN THOMPSON, of New York, read a paper entitled

NOTES ON THE OBSERVATION OF MALARIAL ORGANISMS IN CONNECTION WITH ENTERIC FEVER.

The possibility of typhoid and malarial fever manifesting their symptoms at one time in the same individual has afforded a fertile subject for debate for many years, with the result that the belief in the simultaneous action of the two infections has been generally losing advocates. The theory originally advanced by Woodward, that a "typho-malarial" fever exists as a specific and independent disease, has been abandoned by competent clinicians and by Woodward himself, although it is occasionally revived in the South and Southwest, in discussions upon the continued fevers of the South. The belief is almost universal that typhoid fever, as observed in New York, is uncomplicated by malarial infection, and that quinine, except as a tonic in convalescence, is worse than useless in its treatment. For this reason, the cases of the author seen in New York last summer and autumn are of unusual interest.

CASE I. The patient, J. McN., male, forty-three years of age, was admitted to the Presbyterian Hospital, August 18, 1893. He had continued fever which lasted for seven weeks, during which time he developed the following symptoms: A genuine typhoid eruption, there being some forty distinct rose spots on the abdomen and chest, which appeared in successive crops; hæmorrhages from the bowels, tympanites, bronchial catarrh, slight albuminuria with granular casts, semi-stupor and delirium, subsultus, great prostration and emaciation, and the facies of the typhoid condition. On the thirteenth day of the illness there was a severe chill, lasting about three-quarters of an

hour, and so violent that the patient shook the bed. It was accompanied by a rise of temperature to 106.6° F., but there was no sweating. During the third week two other chills occurred of equal violence. The malarial plasmodium was found in exceptionally large numbers invading the red blood-corpuscles and also independent of them. The hypodermatic administration of quinine reduced the temperature very markedly. No more chills occurred after the beginning of the fourth week, but the use of quinine was continued by the mouth, and the bathing, previously interrupted by the hæmorrhages, was resumed. The patient made a good recovery, and after fifty-five days in the hospital was discharged cured.

CASE II. The patient, J. J., an Irish laborer, thirty years old, had a typical case of typhoid fever, and was treated by the cold tub-bathing without medicine, receiving in all thirty baths. The temperature became normal on the thirty-first day, and remained below 99.4° F. for several days, and on the thirty-seventh day suddenly rose to 106° F., and was accompanied by profuse perspiration. There were chills and high fever on the two successive days at the same hour, and malarial organisms in abundance were found in the blood. From the continued giving of quinine the patient had no more chills or fever and in a few days was discharged cured.

CASE III. This case was very similar to the preceding one. The patient, after making a good recovery from typhoid fever, was about to be discharged as cured on the forty-first day, when he had a severe chill followed by fever and sweating. The chill was repeated the next afternoon at about the same time, also with increased temperature. Quinine was promptly given and the blood was not examined until the patient had received twenty grains. No malarial organisms were found, but abundant malarial pigment granules were contained in the blood-cells. Under the continued use of quinine, the patient recovered three days later.

While it is unwise to accept the term "typho-malarial" fever as indicating a third form of disease, which is neither typhoid fever nor malarial fever, it cannot be denied that the two latter diseases may co-exist.

DR. WM. M. OSLER, of Baltimore, thought the first case of Dr. Thompson's one of unusual interest, and he knew of no instances in the literature in which the two diseases had been so accurately and carefully described running concurrently. It would, however, be a great mistake to suppose that chills in typhoid fever always indicate malaria, since it is well recognized that they are by no means uncommon, and due to various causes. In the past year at the Johns Hopkins Hospital there have been several instances of typhoid fever with heavy chills in which the malarial parasites were not present. Dr. Osler exhibited a chart of the only case in which a patient was admitted to the hospital with a double infection of malaria and typhoid fever. He entered the hospital October 16th with tertian intermittent fever, the organisms being found in his blood. He was given quinine, and the temperature from the 18th to the 22d remained normal or subnormal. On the night of the 22d the temperature began to rise and did not fall to normal till the sixth week, during which time the patient had a very severe attack of typhoid with not a single feature pointing to any malarial influence. Dr. Osler also related an interesting case in which malaria and pneumonia were concurrent. Qui-

nine caused the parasites to disappear from the blood, but had no influence upon the temperature. These are the only two instances in a series of nearly 300 cases of malaria and 309 cases of typhoid, and with blood examined in all, in which malaria has occurred with another infection.

DR. F. P. KINNICUT, of New York, said that Dr. Thompson's first case was certainly a distinct double infection. We should, however, be guarded in our conclusions in regard to the frequency of these double infections until we have further observations. It is very possible to mistake a remittent fever for a typhoid, and as an illustration of this Dr. Kinnicut detailed the case of a patient in St. Luke's Hospital where this error had occurred. The practical lesson to be deduced from these cases is that the blood should be examined in every case of fever coming into the hospital wards.

DR. G. L. PEABODY, of New York, called attention to the fact that there are other chills occurring in typhoid fever which are of more importance than malarial chills. He had twice seen severe chills late in typhoid fever which were pyæmic in character, as proved by autopsy. He had seen severe chills followed by rise of temperature in typhoid, which did not affect the subsequent course of the disease, the patients getting well without quinine. It is important that the idea should not be given that typhoid and malaria is a frequent combination. That is a fallacy that prevails largely in the country districts of New York, and in some places every case of typhoid fever is treated as "typho-malarial" fever.

DR. E. G. JANEWAY, of New York, said that when a chill comes on in the course of typhoid fever, it is often not necessary to suppose that it is due to the intercurrent of other diseases, for it is due in many cases to treatment by the modern antipyretics. Drop the antipyretics, and the chills disappear.

That the two diseases are at times combined, is proven by the occurrence of both typhoid lesions and pigmentation at autopsy. Dr. Janeway reported a case showing these characteristics. Although malaria and typhoid sometimes coexist, it is not advisable to give the name "typho-malarial" fever to this combination; it should be called typhoid fever with malarial coexistence. Physicians who give the name "typho-malarial" to it, assure the family that it is not typhoid fever, and thus take away the preventive measures for typhoid fever, and the disease has spread in consequence.

DR. G. M. STERNBERG said that Dr. Thompson's first case was a clear case of mixed infection, which, in so pronounced a form, is rather a rare thing. The other cases showed the development of malarial fever during convalescence from typhoid, which is not a very rare occurrence in malarial countries. The cases presented by Dr. Thompson differ from those commonly diagnosed as "typho-malarial" in the Southern States and in other sections of the country. These cases are usually of the comparatively mild character, and do not present distinct malarial paroxysms. The temperature is often quite irregular during the first week, and remittent in character. This leads the doctor to make a diagnosis of malarial fever and to prescribe quinine. In the course of the second week the difference between the morning and evening temperature is not so marked, and he says that the fever has assumed a typhoid type. It has really been typhoid from the

outset. The war statistics show that the mortality from the fever diagnosed as typhoid, was very much in excess of that from the form denominated "typho-malarial" fever. If the typho-malarial was a mixed infection, it presents the anomaly of being less fatal than typhoid fever, in other words, the complication modified the severity of the specific fever. It is possible that there is a widely prevalent endemic fever which is specifically distinct from typhoid. If so, it is equally distinct from the malarial fevers, as quinine has no effect in terminating its course. In any case, the name "typho-malarial" is a mistaken one, and can only lead to confusion of ideas.

DR. J. C. WILSON, of Philadelphia, objected to the use of the term "typho-malarial." This term, so catching, and apparently so proper at the time it was coined, has done much harm and has stood in the way of advancement in the knowledge of fevers. Dr. Thompson's opportune presentation of these cases reopens the whole subject in a most fortunate way. His paper shows how much clearer and how much more definite the work of the medical profession is becoming with our newer and more exact methods of investigation.

DR. J. H. MUSSER, of Philadelphia, reported a case of mixed infection or rather of repeated infection. The child, nine years of age, had in the spring of 1893 an attack of intermittent malarial fever, and in the same year had a second attack which yielded to antiperiodic treatment. In December, the child had scarlatina. Four days after the temperature became normal, measles developed in the child. This was followed by otitis. During the course of the otitis, intermittent fever developed which promptly responded to the administration of quinine.

DR. H. M. LYMAN said that he had seen cases in which typhoid fever ran its normal course, terminating apparently, in convalescence; and then there were successive chills, with rise of temperature following. These chills were usually quotidian, but not at any certain hour of the day and not yielding to quinine, being also accompanied by slight jaundice. These cases have been explained by the French observers as due to the migration of the typhoid bacilli and other pathogenic germs from the intestines into the biliary passages, producing angio-cholitis, which is accompanied by chills and a certain amount of jaundice, not yielding to quinine but being far more benefited by local measures addressed to the liver. These cases must be carefully differentiated from the pyæmic cases, some of which are notable and easily recognized before their conclusion.

DR. W. T. COUNCILMAN said that there did not seem to be any special opposition to the growth of other organisms in the body due to the presence of the bacillus of typhoid. He reported in this connection a case interesting from the number of mixed infections. It was a case of typhoid fever which, while in the hospital, was accidentally exposed to diphtheria. The patient died in the third week of typhoid fever. Throat lesions were seen during life. There were marked typhoid lesions in the intestines; there was a typical diphtheritic process in the throat with false membrane. There was an acute endocarditis and a septic embolus in the spleen. There were typhoid bacilli in the spleen and mesentery glands; diphtheria bacilli in pure cultures, in the pharynx and lungs; streptococci in the bronchial and tracheal glands and

on the heart valves and in the septic embolus in the spleen. There was also a colon infection in the mesenteric glands, in the liver, and in the lungs along with the diphtheria bacillus.

DR. F. C. SHATTUCK, of Boston, said that some of the inexplicable chills which occurred during convalescence from typhoid fever might be due to phlebitis in the internal and inaccessible veins. The chills and subsequent pyrexia may be very similar to those accompanying phlebitis in superficial veins. The importance of a routine blood-examination is apparent. Phlebitis would be accompanied by leucocytosis.

DR. J. E. REEVES, of Chattanooga, Tenn., said that this fever, which has been described as a mixed fever, is a source of constant confusion to the physicians of the South. The clinical history of the fever called "typho-malarial," is not that of pure typhoid fever, and he thought it possible that there may be a species of fever intermediate between malarial and typhoid fever. In the so-called typho-malarial fever there is no diarrhoea, no epistaxis; there is a fitful rise and fall of temperature, and the course of the disease throughout is different from that of typhoid. The first attack makes the subject more permissible to a second and repeated attacks of the same disease. In typhoid, after recovery, the patient fattens up; in typho-malarial fever, the patient is debilitated, has a sallow appearance and probably does not recover his health for six months.

DR. GEORGE DOCK, of Ann Arbor, thought that the cases reported went but a short way in showing the existence of double infection in any proper sense. In Dr. Thompson's first case, the temperature chart did not show that there was any malarial element in the symptomatology before the chills occurred. In Dr. Osler's case the malarial infection seemed to have no influence at all on the course of typhoid. Dr. Kibyonn, of the Marine-Hospital Service, in 1890, reported patients who had typhoid fever and in whom he also found the malarial organisms. The so-called typho-malarial disease is often asserted to be milder than typhoid alone. From the cases reported to-day this is not shown to be the case. While in Texas, Dr. Dock had made autopsies in six cases, diagnosed as typho-malarial by experienced men, and in all cases the lesions were those of typhoid. He therefore concluded that fatal cases having a supposed malarial aspect, were not uncommon.

Such observations as those of Dr. Thompson ought to be repeated on every case of typhoid, especially in those parts of the country where the term "typho-malarial" is used.

DR. W. G. THOMPSON, said that the object of his paper was to make a contribution to the natural history of the malarial organism, rather than to discuss the wide subject of chills in enteric fever. The cases reported by Dr. Osler, taken in connection with his own, proved that the malarial organism may be present throughout the period of infection of typhoid fever. Just how far the malarial germ influences the action of the typhoid germ is a question which still remains undecided.

Two practical points may be deduced from this discussion. The first is the value of routine examination of the blood for malarial organisms in cases of enteric fever that are at all irregular; the second is, that we should determine the value of quinine in those cases where malarial organisms are present.

DR. THOMAS M. ROTCH, of Boston, read a paper entitled

SOME OF THE CHEMICAL AND BACTERIOLOGICAL CHARACTERISTICS OF MILK.¹

This paper gives the results of some investigations in cow's milk, as to its behavior with different breeds, and something about its bacteria; also some remarks on the ash of human milk.

DR. F. FORCHHEIMER, of Cincinnati, said that the work of Dr. Rotch is laudable, if only in the direction of telling us what is normal milk. The normal reaction of milk is undoubtedly alkaline. He had long ago given up the idea of correcting the reaction by adding alkalies, because that is only adding another element to already bad milk. A great number of troubles in infants arises from impure milk, and just as the surgeon protects his patients from sepsis, so it is the duty of the physician to protect infants from milk sepsis. Any one who has taken the trouble to centrifugate milk and examine impurities, will come to the conclusion that the best samples of milk in cities are extremely impure and very dangerous. Any one who has ever seen a centrifugate of ten to fifteen gallons of milk, knows that it almost acts as an inhibition upon the desire to drink milk in the future.

DR. THEOBALD SMITH said that the milk might be directly infected from the udder with disease germs other than tuberculosis. In a sample of milk, milked into a sterile bottle with ordinarily clean hands, he had gotten pure cultures of the staphylococcus pyogenes aureus. Referring to the centrifugalizing of milk, he said that the deposits, so far as the morphological elements were concerned, were made up largely of polynuclear leucocytes. In one case where the leucocytes were exceptionally abundant, the milk was found to contain tubercle bacilli; possibly there may be a relation between leucocytosis in milk and tuberculosis.

DR. T. M. ROTCH said that a practical result of the bacteriological examinations was, that where you cannot provide otherwise for properly sterilized milk, you can get practically sterile milk if you take the last half of the milking.

(To be continued.)

AMERICAN CLIMATOLOGICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Concluded from No. 25, p. 629.)

THIRD DAY. — THURSDAY.

On Thursday, in the absence of the President, DR. ISAAC HULL PLATT presided.

DR. LEONARD WEBER, of New York, read a paper on

SOME PATHOLOGICAL CONDITIONS OF THE HEART AND THEIR RELATION TO DIABETIC COMA.

He said that among the sixty cases of diabetes mellitus which he had treated in the course of his practice, he had seen a number die in coma. It is true that the majority of these were the well-known forms of diabetic coma brought about by acid intoxication of the blood, as it is supposed, by acetone and, especially, diacetic acid, but in addition also through the poisonous effects of ptomaines produced by the

¹ To be published in full in the Journal.

putrefactive processes so frequently occurring in the alimentary canal of diabetic patients; but quite a number go into collapse through deficient cardiac action, by disease of the heart developing in the course of diabetes, as already pointed out by Frerichs. In these cases there are generally no turbulent symptoms, but syncope followed by cardiac death. They might properly be named collapse-coma, as distinguished from the more frequent forms by blood-poisoning. The causes of neuro-muscular disease of the heart in diabetes are manifold. We have, in the first place, the wear and tear of the heart by a chronic disease producing functional weakness and predisposing it to dilatation and atrophy; fatty overgrowth, and later fatty degeneration in the diabetes of fat persons; the poisonous effects of acetone and diacetic acid upon cardiac nerve and muscle, and in addition those of ptomaines resulting from intestinal putrefactive processes. And arterial sclerosis and chronic nephritis, which are quite often associated with diabetes, also have a baneful influence upon the heart.

In the management of diabetes he believes it to be good practice to allow the patient a certain daily amount of carbohydrates as soon as the disease has been gotten under control, and has found this amount to be about three ounces. An absolute meat-diet cannot be maintained very long on account of disturbing digestion and placing the patient in danger of coma.

Every case of diabetes is to be investigated and studied by itself, and the treatment and management adapted to individual requirements. In addition to carefully regulated diet and mode of life, Dr. Weber has prescribed salicylate and bicarbonate of soda (gr. xv each) before meals, or Carlsbad water instead. Where the alkaline treatment did no good, or did not agree with the patient, he has ordered opium in small doses with benefit. In every case he saw good service from the use of massage judiciously applied, and the frequent use of baths. It is by the latter two remedies that the heart is kept fairly strong and active in this disease, which is as yet not curable but manageable.

DR. ROBERT H. BABCOCK, of Chicago, gave

A REPORT OF CASES OF CHRONIC HEART DISEASE TREATED BY THE SCHOTT METHOD OF BATHS AND GYMNASTICS.

The aim of the report was to direct attention to the value of baths and light exercises in cardiac therapeutics, by which it is believed patients suffering with organic heart disease of chronic nature may be more promptly and lastingly improved than by drugs. A statement of the rationale and application of this system was given. As to the baths: "The improvement in the rate and quality of the pulse is an index of the degree of benefit derived by the patient. If not counteracted by exercise, this effect on the pulse will persist for an hour or two subsequently. Changes for the better in the size of the area of cardiac dulness and in the sounds may be noted likewise. This was demonstrated repeatedly last year both on myself by a competent Russian physician, and by myself on others. Careful percussion immediately before and after a bath of eighteen to twenty minutes' duration, showed a demonstrable retraction of the deep limits of cardiac dulness and the heart sounds were improved in strength, the second pulmonary being less accentuated, the second aortic stronger—in short, the abnormal

difference between the two sounds before, being appreciably less marked after, the bath. Murmurs that are almost inaudible before become intensified; and, conversely, some loud bruits are lessened in intensity. In short, so far as can be determined by physical examination, these baths appear to lessen the rapidity and increase the force of the heart's contractions, thereby occasioning a better filling of the great arterial system with corresponding depletion of the engorged veins."

The exercises supplement and reinforce the balneologic treatment.

In a detailed report of 19 cases, 13 showed more or less improvement.

Contra-indications: "There can be no doubt of the danger of this form of treatment in degenerative changes of the blood-vessels and myocardium, such as aneurism and advanced arterio-sclerosis, acute softening and great fatty degeneration of the heart."

A NEW AND DISTINGUISHING SIGN OF LATENT ANEURISM OF THE AORTA,

by DR. W. C. GLASGOW, St. Louis.

The sign to which Dr. Glasgow referred, is the presence of a systolic sound, or thud, in the brachial artery, synchronous with the systole of the heart. This sound is sometimes accompanied by an arterial murmur. When this sound can be heard, and aortic regurgitation can be excluded, Dr. Glasgow claimed that a positive diagnosis of aneurism can be made, even in the absence of all other signs or symptoms. Dr. Glasgow reported five cases of aneurism in which this arm-sign could be heard. He also exhibited a patient from one of the Washington hospitals who showed this sign.

OZONE IN PHTHISIS, WITH ESPECIAL REFERENCE TO THE PNEUMATIC CABINET,

was the subject of a paper by DR. CHARLES E. QUIMBY, of New York.

FOURTH DAY.—FRIDAY.

THE COMPARATIVE RARITY OF PHTHISIS IN THE HIGHLANDS OF PENNSYLVANIA AND THE ADJACENT COUNTIES OF NEW YORK,

by DR. GUY HINSDALE, of Philadelphia, was the first paper read on Friday (DR. R. G. CURTIN in the chair).

Attention was called in this paper to the low mortality from consumption in a district falling partly within New York and partly within Pennsylvania, embracing an area of 12,000 square miles. Throughout this region, there is, according to the best available information, a population of over 1,000 persons living to each annual death from phthisis. The maritime district of New York, including West Chester County and Long Island, has a population of only 400 for every annual death from phthisis, while the seven counties of the southern tier, namely, Chautauqua, Cattaraugus, Alleghany, Steuben, Chemung, Tioga and Broome, have an average of 1,091 persons living to each annual death from phthisis. The Highlands of Pennsylvania particularly referred to, embrace the counties of McKean, Potter, Forest, Clarion, Elk, Cameron, Union and Sullivan. This entire region has an elevation of from 1,200 to somewhat over 2,000 feet; it is characterized by extensive forests, a dryer air and lower temperature than prevails at the seaboard or lake shore; and by reason of its distance from the storm

tracks of the St. Lawrence Valley and the changing temperature of the seaboard, it is eminently suited for the consumptive. In Pennsylvania, Kane, in McKean County, is very favorably situated, and has acquired considerable reputation as a resort in phthisis and hay-fever. Pneumonia, pleurisy and diphtheria are rare in this locality. The country surrounding Kane is an elevated table-land of 2,000 feet elevation; the water-courses are quite small, and fogs which are common in the deep valleys are not observed in this high plateau or "Big Level," as it is called.

SOME METEOROLOGICAL DATA OF COLORADO.

DR. SAMUEL A. FISK, of Denver, reported as a member of a committee of the Association appointed to collect meteorological data of the resorts of this country. Dr. Fisk exhibited tables giving a comparative study of the elevation, relative and absolute humidity, precipitation, velocity of wind, etc., of eighteen different stations scattered all over the United States. These tables were used mainly to illustrate the Colorado climate. He claimed for Denver (or the region for which it stands) the advantages of elevation, atmospheric dryness, a small annual precipitation, a cool climate, a prevailing mild wind of only moderate velocity, and an open sky.

HON. MARK W. HARRINGTON, chief of the Weather Bureau, read an exceedingly interesting paper on

SENSIBLE TEMPERATURES,

and exhibited charts in illustration.

In introducing his paper, Professor Harrington said, "The subject is so new that I am obliged to invent some terms to describe it." By "sensible" temperature, he explained, is meant that which is felt at the surface of the skin, especially where the skin is exposed as on the face and hands. To change a definite quantity of water from the liquid to the vapor state requires the utilization of a definite quantity of that form of energy which we call heat. On evaporation, this heat changes to other forms of energy; it is no longer sensible, and a sense of coolness results from its change. Thus is caused a reduction of temperature at the spot where the evaporation takes place; and while the evaporation continues, the surface from which it takes place is cooler than the general air-temperature.

The reduction of temperature caused by evaporation depends on the rapidity with which evaporation takes place, and this, in turn, on the amount of moisture already in the air. In general, when the air is saturated with moisture (that is, when the shade-temperature and dew-point are the same), there is no evaporation, and the reduction is zero. When the air is supersaturated, condensation, the reverse of evaporation, takes place, heat is released, and instead of a reduction we have an addition to the temperature. But when the air is not saturated, a reduction of temperature takes place.

The amount of this reduction will be greatest where the air is driest, least, where the air is moist. In Washington, Philadelphia, or San Francisco, the moisture is abundant, evaporation is relatively small, and hot weather feels hot. On the other hand, at Denver, Santa Fé or Prescott, the moisture is generally scanty, especially in hot weather, and the reduction is great. The most extreme case easily accessible is that of Furnace Creek, Death Valley, Cal. During the ob-

servations taken there in the summer of 1891, on five days the maximum temperature reached 122°; the temperatures of evaporation from 74° to 77°. The temperature felt by a person favorably situated was from 45° to 48° lower than that shown by the thermometer in the shade, and was almost cool for a summer afternoon.

It appears that in arid regions, the reduction may make hot weather not only endurable but even agreeable and refreshing.

So far it has been only a question of temperatures in the shade. Temperatures in the sun are always higher, and may be very much higher. On a hot summer afternoon, a temperature of 130° in the direct sun's rays is not rare in any latitude of the United States. Sometimes this temperature reaches 140°, and occasionally it is even higher. The conditions for sensible temperatures already stated do not apply in such cases — in part, it may be because of the failure of sufficient perspiration to give free evaporation; in part, because of the special effects which strong and direct insolation has on organic structures.

To obtain the beneficial effects of the reduction of temperature by evaporation, the shade must be sought, and the direct sun's rays avoided. The effects may be heightened by a natural or artificial breeze or wind; and for parts of the body covered by clothing they may be obtained by adapting the clothing to the free passage of air and moisture.

DR. JUDSON DALAND, Philadelphia, gave a detailed report of three cases of

BERI-BERI,

with examination of the blood. The greatest interest in these cases surrounds the question of etiology. Beri-beri has been observed in Japan, portions of Africa, and in the East and West Indies, and, as has been shown by Scheube and Baelz, it is an endemic peripheral multiple neuritis. Muira believed it to be due to fish, especially decomposed fish, while others attribute it to rice. These cases tend to bear out Muira's theory. The food of these men was almost exclusively fish and rice. Some of the fish was dried; much was spoiled; the quantity was insufficient. The main facts, as given by Dr. Daland, seem to point conclusively to poisoning by some substance in rice or decomposing fish, probably of the nature of misccarin.

These three cases recovered, as did eight others, sailors in the Brazilian navy, reported by Dr. Gihon.

Unfortunately, the time of the meeting did not allow for the reading in full of the paper of DR. DALY on

SOME PRACTICAL OBSERVATIONS ON SO CALLED MALARIA,

and that of DR. W. C. GLASGOW on

PHYSICAL SIGNS OF CELLULAR ŒDEMA OF THE LUNG CONSIDERED IN THEIR RELATION TO THE PATHOLOGICAL CHANGES.

A BIT OF MEDICAL CORRESPONDENCE. — A correspondent of the *Northwestern Lancet* sends the following letter received from a Dakota patient:

May 6th, 1894.

Dear Sir. I will write and tell You how he is he is just the same and his stomick bloth up and is so hard that he thing that it is gunt buts he is sick over his hole body and it sits up on under his brist but he is gat good opening in frant and behind.

Recent Literature.

An American Text-Book of Gynecology, Medical and Surgical. For Practitioners and Students. By HENRY T. BYFORD, M.D., J. M. BALDY, M.D., EDWIN B. CRAGIN, M.D., J. H. ETHERIDGE, M.D., WILLIAM GOODELL, M.D., HOWARD A. KELLY, M.D., FLORIAN KRUG, M.D., E. E. MONTGOMERY, M.D., WILLIAM R. PRYOR, M.D., GEORGE M. TUTTLE, M.D. Edited by J. M. BALDY, M.D., with 360 illustrations in text, and 87 colored and half-tone plates. Philadelphia: W. B. Saunders. 1894.

This is the most notable contribution to gynecological literature that has appeared since the publication of the "American System of Gynecology" in 1887. The high professional standing of the authors and the thorough manner in which they have utilized what has stood the test of time in this branch of medicine, and have given us the latest ideas on the various subjects treated, make it the most complete exponent of gynecology which we have. How long it will hold this position, in view of the rapid strides which are being made especially in this department is another question; until that time it will be looked to as an authoritative statement. Like a system of surgery published by the same firm, though of composite authorship, its various chapters are unsigned and the authors are as a body responsible for the views advanced. While this may have its advantages, yet where there is an editor-in-chief who can see that every part is adequately treated, and conflicting methods are not advocated, we think it is better for each author to accept the responsibility of what he has written. The average reader, especially of a subject where there can honestly be differences of opinion, naturally wishes to know who has made this or that statement, and such knowledge may add or detract from its value.

As a whole, the work has been well done as was to be expected, especial attention has been paid to the rules for and methods of antisepsis, to full descriptions of the technique of operations, including many new ones, and to the modern views of pelvic pathology. But no subject seems to have been neglected though the different parts vary in merit. Sometimes it seems as if the sense of proportionate value had been lost, but this is not strange when the natural bias of many of the writers is taken into consideration. Thus as between operative and non-operative methods of treatment, the former are sometimes, as it seems to us, given undue prominence, and this leads us to say that it is in no sense a text-book or primarily adapted for the student. It is too advanced and technical. But the gynecologist and surgeon and the general practitioner who has any desire to practise diseases of women will find it of practical value.

As we have read it through, there have naturally been statements with which we were not wholly in accord. Some few points have seemed worthy of mention. In Fig. 2 of the frontispiece the vulva is drawn much too high. The opening of the anus would more nearly represent its true position. The chapter on the "technique of gynecological operations" is excellent, though just what is gained by an illustration of a "patient being etherized," or of "washing away permanganate of potash with oxalic-acid solution" we fail to see.

In the chapter on the "examination of the female pelvic organs" too much space is devoted to the uterine elevator. Byford's is the best, but they are both dangerous and useless.

A separate chapter is devoted to "genital tuberculosis," a subject which has been neglected heretofore. It is thoroughly treated, beginning with lupus and following up the whole genital tract. As was to be anticipated, the author's treatment of the subject of inflammatory diseases of the uterus is thoroughly in accord with modern pathological views. The uterus is looked upon as the source of the trouble and as a result of this, they recommend that curettage of the uterus is indicated in every case of acute tubal or peritoneal inflammation where the source of infection has been in the uterus.

The chapter on "distortions and malpositions" is in general very good. We think the authors condemn too strongly the use of stem pessaries in the treatment of dysmenorrhœa associated with ante flexion, and are unwise in advocating the use of a repositior to replace the retro-displaced uterus. If Schücking's operation for a backward displaced uterus is "mentioned merely to condemn it," it is surely unnecessary to illustrate it with two cuts. The chapters on "malignant diseases of the female genitalia," and on "uterine neoplasms," are among the best in the book, and are very valuable to the operator.

In the matter of illustrations and plates the book surpasses anything we have seen. If we made any criticism we would say that some of them are unnecessary, and that except where it is essential to illustrate the point desired, absolutely nude figures are not in good taste. The book is well gotten up, and the letterpress admirable.

Minor Surgery and Bandaging. Including the Treatment of Fractures and Dislocations, Tracheotomy, Intubation of the Larynx, Ligation of Arteries and Amputations. By HENRY R. WHARTON, M.D., Demonstrator and Lecturer on Surgical Diseases of Children in the University of Pennsylvania, Surgeon to the Presbyterian Hospital, the Methodist-Episcopal Hospital and the Children's Hospital, Consulting Surgeon to the Presbyterian Orphanage. Second edition, thoroughly revised and enlarged, with four hundred and sixteen illustrations. Philadelphia: Lea Brothers & Co. 1893.

This work has quickly reached its second edition, and the author has revised the aseptic and antiseptic method of wound treatment, bringing them up to date; a number of new illustrations have been added. The book is divided into six parts. The first is on bandaging, the second on minor surgery, the third on fractures, the fourth on dislocations, the fifth on ligation of arteries, and the sixth on amputations.

The part on bandaging is illustrated by some beautiful half-tones, which add greatly to the text. A little more attention to detail in the description of some of the operations described would enhance the value of the book. Some of the illustrations are without value, except in so far as they stimulate the imagination. The book, as a whole, though, is one of the best minor surgeries that we possess.

On the authority of the *Hamburger Freisinnige Zeitung*, there were in Prussia last year, 1,200 individuals who died from delirium tremens, and 500 who committed suicide through intemperance.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JUNE 28, 1894.

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ZOLA AND LOURDES.

ZOLA's new novel, "Lourdes" is said to have been received with furor in Paris. It has been running as a serial through two of the leading daily papers. Though the book is ranked as fiction, the author has evidently pictured the scene in a realistic and on the whole, truthful aspect. The story of the miraculous appearance of the Virgin to Bernadette, a shepherd girl in 1858, and the erection of a great temple and sanitarium at Lourdes over the grotto, the scene of the apparitions; the innumerable pilgrimages of the sick to the spot; and the wonderful tales of sudden cures are familiar to all. The subject, moreover, has been recently reviewed in striking colors in two numbers of the *Revue des deux Mondes*, by Emile Pouillon, who insists on the reality of alleged miraculous cures.

Zola's tale opens with the description of a crowded train carrying sick pilgrims from Paris to Lourdes. There are patients there who for years have been bed-ridden; some are in the last stages of consumption; some have frightful lupus sores; some chronic eczematous eruptions; one passenger is at the point of death; one woman is taking her dying baby to be cured at the miraculous grotto; some are paralyzed. Just as the train leaves a certain station, a young girl gets on the car. She tells the story of the miraculous cure accorded to her diseased foot by simply dipping it in the water at Lourdes.

A vivid picture is given of the confusion when the invalids are landed at Lourdes. Hundreds of them are hurriedly conveyed in carriages and litters through the mud and dark to the big hospital until the procession shall be formed.

The hospital is greatly overcrowded. The sisters do their work heroically. At 8 A. M. the procession to the grotto is formed. The long line of invalids afflicted with every conceivable disease makes a horrible contrast to the beauty of the landscape. A priest

mounts the stone pulpit and asks the vast congregation to pray for a great miracle, as the body of the man who died on the train is to be immersed in the pool in hopes that life will be restored. The dead man is brought in and immersed amid vociferous supplications. No miracle occurs, and the corpse is taken away. The pool is thronged with sick persons, who eagerly await their turn. The supplications of the bystanders are of an urgent, imploring, sometimes almost of a scolding nature. Cures are demanded, that the honor of the grotto may be maintained, the good name of the importuned vindicated, that unbelievers may be convinced and converted.

So many are bathed in the pool that the water soon becomes filthy beyond description. The water in the pool is only changed twice a day, as the supply is somewhat scanty. No one better than Zola could describe the nastiness of the water, so seldom changed, in which so many persons suffering from cancerous and tubercular affections, purulent sores, ophthalmus, and offensive cutaneous diseases were bathed. "What a home for microbes," exclaims one of Zola's characters; "the present mania for antiseptic precautions receives a fearful blow from such a spectacle! How does it not happen that one nasty disease does not kill all the invalids?"

Zola, in a chapter lately published, describes a visit to the Bureau of Certifications, from which it would seem that there is a good deal lacking in the thoroughness of the methods of verification. The testimony of often unknown and obscure physicians was taken as to the condition of patients when they came for treatment; they were not subjected to a preliminary examination by a competent commission, and when any announced themselves as cured, there was always room for scepticism as to whether they had come to Lourdes with any serious malady, not amenable to cure by some strong psychical influence.

As to the percentage of "cures" effected at Lourdes, Zola estimates it as not more than 1.0 per cent., that is, nine out of every ten coming to Lourdes with faith and great expectations go away unrelieved; cases that expert physicians call clearly incurable are not benefited. As for the miracles occurring at the grotto, he is puzzled, and feels that probably a great mistake has been made somewhere. We conclude by giving a brief citation from the fourth chapter:

"Pierre began now to comprehend what this all meant — all that was taking place at Lourdes — this extraordinary spectacle at which the world had assisted for years, amid the devoted adoration of some and the mocking laughter of others. Certainly, the whole matter was very badly understood — almost ignored; but a hidden force moved it on — first the suggestion, then the perturbation of anticipation, the fascination of the journey, the prayers and the hymns, a growing exaltation and finally the healing breath, the unknown power that separated itself from the masses in a marked crisis of faith. He even fancied it rather stupid not to believe in these frauds. The facts themselves were very great, but at the same time far more simple. It was not necessary for the fathers of the grotto to condescend to lie — they must only needs add to the confusion to utilize the universal ignorance. They might even confess that all was done in good faith — the unknown doctors who gave the certificates, the comforted invalids who fancied themselves

cured and the enthusiastic witnesses who vowed they had seen. After all this it was evidently impossible to prove whether there had or had not been a miracle. From that moment did not the miracle become an actual fact to the larger number for all those who suffered and for those who had need for hope?"

REVISION IN THE AMERICAN MEDICAL ASSOCIATION.

WE call the especial attention of our readers who are interested in the evolution of the American Medical Association to the clear statements in the excellent letter on page 657 of this issue (from our special San Francisco correspondent). One finds therein not only a capital account of this individual meeting, but also a suggestive explanation of the forces at work to effect a modification in the government of the Association. An unavoidable delay gives our readers this letter later than we had hoped, but it is none the less readable on that account, and one sees more accurately after the smoke of the action has cleared away.

MEDICAL NOTES.

THE ROYAL SOCIETY OF EDINBURGH MEDAL. — The Royal Society of Edinburgh has awarded one of its medals to Prof. T. R. Fraser of Edinburgh University, for his work on strophanthus.

THE DECLINE OF THE MALE INTELLECT. — Again the senior wrangleship at Cambridge, England, has been obtained by a young woman, who is reported to have had a long lead over her male competitors. Her name is Johnson.

A MEDICAL CENTENARIAN. — Dr. Salmon, of Cambridge, South Wales, is the oldest physician in England. He was one hundred and four years old in May. He has a patient in the same town who is one hundred and five years old.

BOLD ADVERTISING. — The following advertisement appears in the *Münchener Medicinische Wochenschrift* of June 5th:

"TO THE PUBLIC. — I hereby take it upon me to make the welcome announcement to physicians that I have acquired the sole right of manufacturing the ANTICONCEPTION WADDING TAMPONS, according to the formula of Dr. —. See his pamphlet, "The Means to Prevent Conception," p. 29, published by — & —, price 1 mark 50 pf. I have them chemically prepared in different-sized packages. With respect and pleasure, —, Apothecary and Chemist.

"TAKE NOTICE. — Chemically prepared Anticonception Wadding Tampons. See page 29, etc."

Comment is unnecessary!

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, June 27, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 44, scarlet fever 35, measles 26, typhoid fever 15.

OPERATIONS AT THE BOSTON CITY HOSPITAL. — During the visit of the members of the Massachusetts

Medical Society to the Boston City Hospital at the recent meeting of the Society, the following operations were performed: an external urethrotomy, an appendicitis, two hysterectomies and a complete removal of the breast and glands of the axilla.

HONORARY DEGREE. — Dr. D. W. Cheever, Emeritus Professor of Surgery in the Harvard Medical School, received the degree of LL.D. from Harvard College at Commencement, June 27th.

HARVARD MEDICAL ALUMNI ASSOCIATION. — The Harvard Medical Alumni Association held its annual meeting and annual dinner, in Boston, on Tuesday, June 26th, at 12 and 1 o'clock. The usual routine business was transacted at the meeting. At the dinner, at which presided most felicitously Dr. James R. Chadwick, Dr. W. W. Keen, of Philadelphia, Dr. Wm. Osler, of the Johns Hopkins University, Dr. W. M. Polk, of New York, and Dr. J. S. Billings, U. S. A., made speeches. A full report of the occasion, which was one of much interest, will be given later.

HARVARD DENTAL ALUMNI ASSOCIATION. — The Harvard Dental Alumni Association held its twenty-third annual meeting and its annual dinner at the Hotel Thorndike, Boston, Monday evening, June 25th. Dr. Virgil C. Pond, President of the Association, presided; and after the dinner speeches were made by Bishop Lawrence, of Massachusetts, Mr. Thomas, Private Secretary of the Governor of the State, Dr. George B. Shattuck, of the Board of Overseers of Harvard College, and Mr. W. R. Thayer, Editor of the *Harvard Alumni Magazine*. The Association is in a flourishing condition.

THE ANNUAL ADDRESS IN MEDICINE AT YALE UNIVERSITY. — The Annual Address in Medicine before the Medical Faculty of Yale University, was given by Dr. William T. Lusk, on Tuesday, June 26th. Dr. Lusk chose as his subject, "The Illustrious Boerhaave." Prof. William H. Carmalt gave a reception to Dr. Lusk in the evening of the same day.

TUFTS MEDICAL SCHOOL COMMENCEMENT. — At the commencement exercises of Tufts College held on June 20th, the degree of Doctor of Medicine was conferred upon the first class to graduate from the medical school of the college. Seventeen persons were given degrees. An honorary degree of LL.D. was conferred upon J. S. White, of Brooklyn, Dean of the Long Island Hospital Medical School.

THE MASSACHUSETTS INFANT ASYLUM. — The twenty-seventh annual report of the Massachusetts Infant Asylum, shows a most successful year's work. Of 88 children in the hospital but five died, two of bronchitis in the hospital, and three who were out boarding — one of bronchitis, one of enteritis, and one of convulsions of unknown origin. During the twenty-seven years of its existence the hospital has cared for nearly 3,700 children, with a total mortality of only 468, or less than 18 per cent.

PROTESTS AGAINST THE CONTINUANCE OF TWO HOSPITALS. — The Committee on Health of the Board

of Aldermen of Boston, gave a hearing last week to the remonstrants against the licensing of the Baptist Hospital on Bellevue Street, Longwood, and of the Free Consumptives' Home on Quincy Street, Dorchester. The hospital having withdrawn its petition for a license for a lying-in department, no especial permit is required for the carrying on of a general hospital. The Board, however, has statutory power to prohibit hospitals in any particular portion of the city; and it is this restrictive power which the remonstrants desire the Board to exercise, on the ground that both hospitals are situated on residential streets to the disadvantage of property owners.

NEW YORK.

THE TENEMENT-HOUSE POPULATION.—Dr. Roger S. Tracy, Deputy Registrar of Vital Statistics, has just completed the semi-annual census of the tenement-house population of New York, and his report was presented at a meeting of the Board of Health held June 19th. It shows that the total tenement-house population is 1,832,773, and that the total number of tenement-houses is 89,138. Of this number there are 2,346 rear houses, and the population of the latter amounts to 56,130. In the ward which contains the largest tenement-house population (the twelfth) there are 7,702 tenement-houses, with a population of 252,381; and in the ward which contains the smallest (the second), there are 8 tenement-houses, with a population of 175. The total number of children under five years of age residing in tenement-houses in the city, is 180,359.

SMALL-POX AND CHICKEN-POX.—A short time since some cases of eruptive disease occurring at Stapleton, Staten Island, were pronounced by the local health officer to be chicken-pox. Some of the other Staten Island physicians believed these cases to be really small-pox, and with the consent of the health officer, Dr. A. H. Doty, Chief of the Bureau of Contagious Diseases, and other experts from New York, were asked to examine the cases. They unhesitatingly expressed the opinion that the disease was small-pox, and the health officer, although not convinced, promised to take all possible precautions in the way of quarantine and disinfection. The matter having been brought to the attention of the State Board of Health, representatives of that body visited Stapleton on June 20th, and reported that the cases were undoubtedly small-pox, and on the day following, at the request of the State Board, Dr. Bryant, of the New York City Health Department, was sent to Stapleton to take charge of the disinfection of the premises where the cases had occurred, and to direct the vaccination of all persons who had been exposed to the disease.

TREPHINING FOR HEADACHE.—At a meeting of the New York County Medical Association held June 18th, Dr. J. Marshall Hawkes presented a patient, a young man, whom he had trephined for persistent localized headache. In Starr's recent work on "Brain Surgery," Dr. Hawkes said it was stated that this op-

eration had been performed but twice for the purpose in question, once in London, and once in New York, by Dr. Robert F. Weir. From early boyhood this patient had suffered intolerably from frontal headache, and though he had consulted a large number of physicians, every remedy that had been tried had utterly failed to give him relief. Thinking that the trouble might possibly be due to eye-strain, Dr. Hawkes first sent him to Dr. H. Knapp, but the latter found that there was no difficulty of this kind. On making an examination of the head, the only abnormality that could be detected was a slight indentation of the bone in the right frontal region. As a last resource, Dr. Hawkes determined to trephine at this spot, and on June 30, 1892, a button of bone, about two-thirds of an inch was removed under strict antiseptic precautions. It was found that in the location named there was a depression of the inner table of the cranial bone, making pressure upon the brain substance, and the button removed was exhibited to the Association. From the time of the operation there had been complete relief from the headache, and as two years had now elapsed, the cure could be pronounced permanent.

Miscellany.

THE FIRST DISPENSARY.

In an account of the development of the Hospital Sunday Fund, the *Lancet* relates the story of the establishment of the first dispensary. "In 1696, an instrument was signed by the President of the Royal College of Physicians, most of the Elects, Senior Fellows and Candidates, declaring that 'no method hath been taken to furnish the poor with medicine for their cure at low and reasonable rates,' and subscribing sums of money to be 'expended in preparing and delivering medicines to the poor at their intrinsic value.' Notwithstanding 'the vigorous opposition of a few men who thought it their interest to defeat so laudable a design,' a dispensary was erected in Warwick Lane 'being an apartment in the College set up for the relief of the Sick Poor,' and managed for many years with integrity and disinterestedness. It was of this that Dr. Garth wrote:

"There stands a dome majestic to the sight
And sumptuous arches bear its oval height;
A Golden Globe placed high with artful skill
Seems to the distant sight a Gilded Pill."

JAPANESE GIRLS IN BOXES.

THE beauty of Japanese girls is proverbial, and their attractiveness led recently to an attempt to smuggle some of them out of their country to become the slaves of their purchasers.

According to the report of the officers of the Northern Pacific steamer *Tacoma*, just as that vessel left Yokohama on a late trip, a Japanese man came on board with four large boxes, which he said he wished put in the steerage as his luggage. Just as the first box was about to be lowered a rapping and faint cry was heard from one of them, and on opening it a young Japanese girl was found doubled up inside. Each of

other boxes was found to contain a similar Danæ, but all of these three were unconscious. After several of them were resuscitated, but the third was moribund when discovered and soon died.

On police investigation the responsible agent was not found, but the Japanese woman who had enticed the girls to her house and drugged them was discovered. It is said she has a husband in Portland, Oregon, to whom the girls were consigned.

It had been planned that the steerage passenger would open the boxes after the vessel left the Japanese waters and release the girls, paying any fare which might be required. Three air-holes had been bored in each of the boxes, but these had become almost closed by the bodies of the girls, which were crowded into the coffin-like confines in a cruel manner. Each box was two feet three inches in length, and about eighteen inches in depth and breadth. In each of the boxes was a piece of bread.

Correspondence.

[From our Special Correspondent.]

LETTER FROM SAN FRANCISCO. THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

ATTENDANCE.—WORK IN GENERAL SESSIONS AND IN SECTIONS.—CHANGES IN OFFICERS.—CENTRALIZATION.—REVISION OF THE CONSTITUTION. THE CODE.—ENTERTAINMENTS AND HOSPITALITIES.

SAN FRANCISCO, June 11, 1894.

THE forty-fifth annual meeting of the American Medical Association has been voted a scientific and a social success. In point of attendance it has exceeded many former meetings held in populous eastern centres, nearly 600 members having been registered in attendance. The greater number of the sections were well organized, those failing to make a good showing being usually in a similar position. Even the section on Oral and Dental Surgery, that had been the despair of its energetic officers, was well attended and had ample material for its consideration. The section on Surgery had been assigned quarters in Memorial Hall which would accommodate 300 persons, but even this was found too small at times, and this interesting section, which had much more material than it could dispose of, was shifted to the hall in which the general sessions were held. The section on Medicine and that on Obstetrics and Diseases of Women were always well attended. In fact, throughout the meeting a genuine and lively interest was taken in the scientific work, which was excellent in character.

Of all the western cities none can surpass San Francisco in the facilities she presents for the entertainment or for the reception of a large gathering, such as the American Medical Association. Her hotel accommodation is of the best, and of that which is strictly first-class there is always plenty to be had. The position which this city has long held as the metropolis of the Pacific Coast has created a demand for all that goes to make up a large city in a more populous region. Her halls are numerous and commodious, and of amusements and points of interest to the visitor there is no lack. The only thing therefore required to make the meeting a success were an ample attendance and efficient preliminary work on the part of the committee of arrangements. The visitors came, and the committee certainly did its work in a most thorough manner.

Twenty-three years is a long time in the life of a man or of an organization. To paraphrase the statement of the Governor of Carolina, "It is a long time between meetings." During this interval the membership derived from

the former meeting had died off or dropped out, only a few of the "old guard" remaining, supplemented by additions mainly by application. When, therefore, the Association decided to go to California the chairman of the committee realized that he had a large contract on his hands; and after some consultation with his committee he started East on an educational tour. When fully informed as to the machinery of the meeting, it was next necessary to map out all the detail work and to instruct every one in his particular task. When these facts have been taken into consideration, the committee must certainly be congratulated on the very successful results of its labors. The attendance was good, and indeed more than the most sanguine anticipated, amounting in all to something like 1,200; but it is now certain that more prosperous times would have largely increased these figures.

The phenomenal weather was also an unfavorable factor. At the last moment many who intended to go were afraid to start. Some already under way failed to reach San Francisco in time for the meeting. To crown these uncertainties, it was announced at headquarters that the Association train, with the President and many of the officers, was "stalled" in Colorado, unable to proceed and with some reason to fear that it could not return. This train was ultimately rescued; and the belated travellers, after two days delay, reached California by the southern instead of the northern route. The railroads made the best of the situation, the California company giving the train the right of way in its territory and getting it in five hours ahead of schedule time. "All's well that ends well," and most of the travellers were on hand for the opening of the meeting.

The Palace Hotel, the largest in the city and centrally located, had been selected as headquarters. The registration bureau was located in one of the large halls of the hotel, and in an adjoining hall was the ladies' headquarters, a feature that contributed in no little degree to the pleasure of visitors. Previous to the meeting a ladies' committee had been appointed, whose duty it was to look after visiting ladies and provide for their entertainment. During the entire session members of this committee were on duty at headquarters, and all were made to feel at home. The registration bureau, though hard pressed at times, did effective work and did not break down. It was, during the busy hours, often a little behind; but no flagrant mistakes were made, which is somewhat creditable where all were new to the work. Here, as in every other department, the local committees may be said to have been swamped. The most sanguine had not calculated on so large an attendance, and the friends and relatives accompanying the members were an agreeable though unexpected surprise. While supplies of all kinds had been, as was supposed, liberally provided, fresh requisitions were demanded; and it was even necessary to reprint the entire programme, to provide for new arrivals.

A majority of the visitors found quarters at the Palace, and here also rooms were provided for the committees. The general sessions, all the section meetings and the exhibition were housed in the Odd Fellows' Building. The whole building had been engaged, and was ample for the purposes of the Association. On the ground floor, which was lighted by electricity, a very fair exhibition attracted the attention of the members during their leisure moments in the day. Immediately above was the main hall in which the general sessions were held, and here also the section on Surgery was compelled to seek better accommodations. This had been very tastefully decorated by the local committee, greatly enhancing the effect of the fine hall and materially improving its acoustic properties. Exclusive of committee-rooms there were twelve halls, so that every section was enabled to meet under the same roof. This seemed to give general satisfaction, and while uncommon in the past, should be adopted in every city offering equal facilities. The main hall was well filled at every general session, members and spectators alike anticipating interesting debates.

Dr. Hibberd as a presiding officer earned a well-deserved

popularity. His decisions were prompt; his rulings on debatable points, if a trifle arbitrary and at times not strictly parliamentary, were always well received. His unfailing good humor and ready wit invariably carried the large audience with him, and enabled him to quickly discomfit any opposition that might be manifested. Even in the midst of the heated debates on Constitution and Code, his unfailing good humor disarmed the contending factions, and more than anything else contributed to lessen asperities and to promote harmony throughout the entire meeting. His address, a really presidential message, was broad and comprehensive in character, and was well received. In it he outlined the neutral position he proposed to occupy on the question of revision, at the same time pointing out the feasibility of speedily terminating controversy. His recommendations were heartily concurred in by the Association.

Many will regret the resignation of Dr. R. J. Dunglison, who has for seventeen years been Treasurer of the Association. It is said he resigned to anticipate a movement to oust him that was rather prominent at Milwaukee. It was also hinted that he had not come to California, not desiring to be present at his own funeral. It was further rumored, and had even been published, that Dr. W. B. Atkinson's official demise had been discussed; but the ceremony failed to materialize, and the venerable Secretary has entered upon his thirty-first year of office. It appears that all this is part of a policy of centralization that would place the executive officers of the Association in Chicago. This, no doubt, would facilitate the conduct of the *Journal*, but might be regarded with suspicion by a large number of the Association, which fact it would be well to bear in mind.

As a feature of the meeting of 1894 the general addresses were a failure. That in Medicine, by Dr. Hughes, as a literary composition might be commended; but it was abstruse and theoretical, and above all unpardonably long. When will the readers of papers learn that the average audience can only be held attentive by profoundly interesting topics, briefly stated! The remaining addresses in Surgery and in State Medicine were not read, the authors being absent, and the papers also being out of reach. It is true that more interest will attach to an address when delivered by the author, but in his unavoidable absence there is no reason why the meeting should be deprived of so important a paper, which can be read by the Secretary or by a reader of the author's selection. As it happened, the business of the sessions so fully occupied the time that the remaining addresses could only have been read by prolonging the sessions.

The sensational feature of the meeting, and one on which interest concentrated to the exclusion of all else, was the question of revision. The reports of the committees on Constitution had virtually been before the country for twelve months. A proposed Constitution and By-Laws had been submitted at Milwaukee, and it was well known that certain changes were to be made in the Code. At both meetings when these reports were considered, the hall was filled to its utmost capacity, a number of ladies and a fair representation from the medical students being present in the galleries.

Whatever may be said to the contrary, it is quite plain that the revisers of the Constitution have in mind a concentration of power in the hands of a few, with every indication that this control would be self-perpetuating. Without for an instant impugning their motives, it must be plain to any thinking man that such a result will inevitably be reached. The president is an outspoken revisionist; but it is difficult to realize the soundness of his argument, that from the mode of its election, the business committee must be representative. It is quite true that it is representative of the profession, in the sense that its components are representative men or leaders in the profession. It is also true that by virtue of that fact they are leaders in different branches, or specialists, and equally true that there never will be a general practitioner amongst their number and that he would find no place there. The business committee

has charge of the scientific work of the meetings, it fulfils its function admirably, but it should not be embarrassed by outside matters. These are the weak points of the proposed Constitution, and they found no favor with the Western men.

It was sought to remedy this defect by two propositions: First, that there should be added to the business committee for the purposes of nomination, a representative from each State and Territory. This, while making a very unwieldy committee, would leave things just where they were, as the voting power by numerical superiority would still rest with the business committee. The second proposition would in a few years decide the whole matter in favor of the revisionists. This is to enable every man who has attended twice as a delegate to have the right to vote in future. The inevitable result of this would be to provide a greatly increasing majority of the voters in the Eastern and Central States, and to leave the West hopelessly out in the cold. It is therefore hardly to be wondered that neither change found much favor with the Western men who were averse to committing suicide on the question of representation. Whatever may be the defects of the Constitution proposed by the minority, it was certainly more in consonance with the feelings of the Pacific Coast States, and it is beyond question that it could have been adopted at this meeting. The management of the subject was, however, bad; the supporters of the minority were unaware of their strength or feared to trust themselves, and the tactics of the opposition were certainly superior. As a result, the matter has been deferred for two years, to come up anew, when decisive action would have given the Association the benefit of a trial of the new Constitution.

On the question of a change in the Code, opinions were even more radically divided. The supporters of a new Code in the great West, and particularly on the Pacific Coast, are few in number. The great mass of the profession desire no change, and are perfectly satisfied with the Code as it is. It can hardly be regarded as a matter of sentiment, but rather as being due to a clearer conception of the honesty and fairness as well as of the ethics of the Code. That no change could be effected at the San Francisco meeting was a foregone conclusion, when the Medical Society of the State of California expressed itself as opposed to any change and instructed its delegates to so record their votes. Several of the local societies had also recorded their vote as opposed to change, and those which had not taken formal action were none the less opposed to iconoclastic measures.

Whatever misconception may exist in the Eastern States on the question of consultations, there is certainly none in the Far West. An irregular practitioner or sectarian physician is recognized as such, his honesty and conscientious practice duly respected, or his dishonest methods properly appreciated. Hence there is no association, except by a very few black sheep, nor has the leaven of commercial greed penetrated very deeply. Outside the question of consultation, there is no point except that concerning the holding of patents by physicians on which there could be much controversy. While there are many who feel that a physician should be allowed, if he so desire, to obtain a patent, the majority certainly believe that the present course is the most respectable and professional.

There was an expression of general satisfaction and hearty good-will to do right when the vote on revision of the Code was taken. It was perfectly within the power of the supporters of the Code to have carried the adoption of the minority report by a large majority; but here, as in the case of the Constitution, affairs were mismanaged, and at times many of the delegates did not know how they were voting. There is, however, a temporary cessation in hostilities, and every one parted in very good humor.

In the matter of entertainments California's hospitality cannot be said to have been at fault. The medical societies, the medical schools, private individuals, and, in fact, the whole profession seemed most fully to appreciate the visit of the Association. In several cities in which the Association has been entertained in recent years it has been cus-

ary to solicit contributions from citizens towards an rtainment fund. In this manner large sums have been ed. It was early determined that such methods would be pursued in California, and the decision was reached imit subscriptions to medical societies and members of profession. In spite of hard times a liberal response made, and the committee found itself with ample funds hand. During the short period of four days, with only evenings for pleasure, it was necessary to apportion the ie so as to allow all that were desirous of entertaining, an opportunity to do so.

The ladies were not forgotten, special features being ranged for their amusement during the hours devoted to identic work. Of these the most enjoyable were: a ive through Golden Gate Park, returning by the Presidio id Ocean Beach, and a "tea" at the residence of Mrs. R. . McLean, that showed the visitors a charming home in ie most attractive residence section of the city. On Fri- ay, June 8th, Mr. Adolph Sutro, whose daughter Mrs. G. V. Merritt is a physician, entertained some 300 ladies at inch. Refreshments were served in a large pavilion which will be part of the baths) below Sutro Heights and lose to the famous Cliff House, which Mr. Sutro is estab- lishing on a stupendous scale.

The general entertainments were as follows: commencing with an informal instrumental concert at the Palace Hotel on Monday evening, the San Francisco County Medical Society opened the festivities on Tuesday with a reception at Pioneer Hall. The whole building, including the State Mining Bureau, was open to the visitors and many relics of early days were to be seen. On Wednesday evening Cooper Medical College kept open house at the college building, corner of Webster and Sacramento Streets. The Lane Hospital adjoining, now almost completed, had been temporarily lighted for this occasion, and the several hundred people inspected everything, from auditorium below to dissecting-room on the fourth floor. On the same evening Dr. W. F. McNutt gave a reception at his residence, 1805 California Street. On Thursday afternoon and during the early evening, Dr. L. C. Lane gave a reception at his residence, corner of Clay and Buchanan Streets. Later in the evening the Association, as a "committee of the whole," visited the Mid-Winter Fair. The evening was fortunately very pleasant, there being very little wind, and the Court of Honor was thronged with the Association, members being found at every turn. This was a special occasion; and after sufficient time had been allowed for a thorough inspection, every one repaired to Festival Hall, where refreshments were served and some short speeches were made by the Director-General M. H. De Young, Dr. R. Beverley Cole and others, not omitting Dr. H. O. Marcy. On Friday evening the Medical Department of the University of California gave a very elegant reception at the Hopkins Art Institute on Nob Hill. This palatial mansion, originally built by Mark Hopkins, one of the famous four who planned and constructed the Central Pacific Railroad, is now, through the munificence of Mr. Edwin F. Searles, of Great Barrington, Mass., the property of the University of California.

Saturday had been reserved for the entertainment by the medical profession of the State of California. This took the form of an excursion on the bay; and at 9 A. M. the steamer *Newark* started with over 1,200 persons on board. All points of interest in the lower bay were visited, then passing the quarantine station, the steamer headed for Mare Island, where about two hours were spent ashore visiting the U. S. Navy Yard and inspecting the hospital and the coast-defence vessel *Monterey*, which with other war-ships was anchored off the yard. The homeward trip was made without incident, though the water was not as smooth as it should be at this time of year.

On all sides are heard words of commendation for Dr. R. H. Plummer and the local committees, whose management has been very successful. On the other hand, Californians are unanimous in expressing the hope that the Association will not wait twenty-three years before it revisits the western shores of its territory.

METEOROLOGICAL RECORD.

For the week ending June 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..10	30.07	72	86	59	48	48	W.	S.W.	7	11	C.	C.	
M..11	29.99	78	93	62	59	81	W.	S.E.	12	8	F.	F.	
T..12	30.08	63	72	54	78	93	N.W.	N.E.	3	20	O.	O.	
W..13	30.22	54	58	50	81	71	N.E.	S.E.	12	4	O.	O.	
T..14	30.20	65	82	49	53	55	W.	S.	7	10	F.	C.	
F..15	30.05	74	88	60	65	58	W.	S.W.	10	10	C.	C.	
S..16	29.90	79	92	66	66	66	W.	S.W.	8	9	C.	C.	
Mean	30.07		81	71		69							

* O., cloudy; C., clear; F., fair; O., fog; H., haze; S., smoky; R., rain; T., threat- ening; N., snow. † Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 16, 1894.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Consump- tion.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.	
New York	1,891,308	841	368	18.84	14.28	5.78	7.08	2.16	
Chicago	1,438,000	—	—	—	—	—	—	—	
Philadelphia	1,115,562	—	—	—	—	—	—	—	
Brooklyn	978,394	469	203	18.92	11.00	4.84	7.28	.88	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	501,107	165	53	10.58	10.58	.61	4.88	3.66	
Baltimore	500,000	—	—	—	—	—	—	—	
Washington	308,131	157	4	31.36	3.20	24.32	.84	—	
Cincinnati	305,000	122	45	5.74	.82	1.64	3.28	—	
Cleveland	290,000	125	—	9.60	28.00	2.40	.50	.80	
Pittsburg	263,709	—	—	—	—	—	—	—	
Milwaukee	250,000	—	—	—	—	—	—	—	
Nashville	87,754	37	11	18.90	8.10	5.40	2.70	—	
Charleston	65,165	33	12	17.64	—	11.76	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	100,410	28	9	14.28	10.71	10.71	—	—	
Fall River	92,233	37	18	10.80	13.00	8.10	—	—	
Lowell	90,613	23	10	13.00	13.03	8.70	4.35	—	
Cambridge	79,607	27	10	44.40	7.40	7.40	7.40	14.80	
Lynn	65,123	17	1	11.76	5.8	—	—	—	
Springfield	50,284	20	9	25.00	15.00	—	—	—	
Lawrence	49,900	19	10	15.78	15.78	—	—	—	
New Bedford	47,711	17	5	11.76	—	—	—	5.88	
Holyoke	43,348	6	2	—	16.66	—	—	—	
Brookton	33,839	10	4	—	—	—	—	—	
Salem	33,155	10	4	—	—	—	—	—	
Haverhill	32,925	10	4	—	10.00	—	—	—	
Malden	30,209	8	2	12.50	25.00	—	—	12.50	
Chester	29,806	10	3	20.00	—	—	—	20.00	
Fitchburg	29,383	5	3	40.00	—	—	—	—	
Newton	28,837	6	2	16.66	—	16.66	—	—	
Gloucester	27,293	—	—	—	—	—	—	—	
Taunton	26,864	3	0	—	—	—	—	—	
Waltham	22,068	4	0	—	—	—	—	—	
Quincy	19,642	—	—	—	—	—	—	—	
Pittsfield	18,802	5	2	—	20.00	—	—	—	
Everett	16,585	—	—	—	—	—	—	—	
Northampton	16,381	0	1	—	16.66	—	—	—	
Newburyport	14,073	5	2	—	—	—	—	—	
Amesbury	10,920	1	0	—	—	—	—	—	

Deaths reported 2,230: under five years of age 885; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 380, acute lung diseases 263, consumption 211, diarrhoeal diseases 136, diphtheria and croup 111, scarlet fever 42, whooping-cough 33, measles 24, typhoid fever 15, cerebro-spinal meningitis 11, malarial fever 8, small-pox 5, erysipelas 5.

From whooping-cough Brooklyn 9, New York and Washington 5 each, Cleveland 4, Springfield 3, Boston and Nashville 2 each, Cincinnati, Fall River and Fitchburg 1 each. From measles Brooklyn 11, New York 9, Cleveland and Springfield 2 each. From typhoid fever New York 4, Washington, Nashville and Charleston 2 each, Boston, Cleveland, New Bedford, North Adams and Marlborough 1 each. From cerebro-spinal meningitis New York 6, Washington 3, Lynn and Marlborough 1 each.

From malarial fever New York 5, Brooklyn 3. From small-pox New York 3, Brooklyn 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 9th, the death-rate was 16.9. Deaths reported 3,388: acute diseases of the respiratory organs (London) 236, measles 241, whooping-cough 108, diphtheria 51, scarlet fever 36, fever 33, diarrhoea 28, small-pox (Birmingham 8, London and Manchester 3 each, West Ham 2) 16.

The death-rates ranged from 9.8 in Portsmouth to 25.4 in Liverpool; Birmingham 20.5, Bradford 13.7, Croydon 13.5, Hull 15.9, Leeds 16.6, Leicester 13.5, London 16.8, Manchester 17.1, Newcastle-on-Tyne 18.8, Norwich 13.8, Nottingham 14.0, Plymouth 13.6, Salford 20.8, Sheffield 17.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 16, 1894, TO JUNE 22, 1894.

Leave of absence for one month on surgeon's certificate of disability, with permission to apply to the proper authority for an extension of three months, is granted MAJOR JOSEPH R. GIBSON, surgeon, Fort Snelling.

The leave of absence on surgeon's certificate of disability granted MAJOR JOSEPH R. GIBSON, surgeon, is extended three months on surgeon's certificate of disability.

Leave of absence for one month, on surgeon's certificate of disability, is granted FIRST-LIEUT. FRANK T. MERIWETHER, assistant surgeon, with permission to leave the limits of the Department.

MAJOR JAMES C. MERRILL, surgeon, is relieved from duty in the office of the surgeon-general, to take effect July 1, 1894, and ordered to report in person to the commanding officer Fort Sherman, Idaho, for duty at that station.

Leave of absence for three months, to take effect July 1, 1894, is granted MAJOR JAMES C. MERRILL, surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 23, 1894.

KITE, J. W., passed assistant surgeon. Detached from U. S. S. "Lancaster" and granted three months' leave.

ANZAL, E. W., passed assistant surgeon. Detached from U. S. S. "Lancaster" and granted six months' leave.

STREETS, T. H., surgeon. Detached from U. S. S. "Albion" and granted three months' leave.

URIE, J. F., passed assistant surgeon. Ordered to the U. S. S. "New York."

STEPHENSON, F. B., surgeon. Detached from U. S. S. "Marion" and granted three months' leave.

KENNEDY, R. M., passed assistant surgeon. Detached from U. S. S. "Marion" and ordered to Mare Island Navy Yard.

ALFRED, A. R., passed assistant surgeon. Detached from U. S. S. "Minnesota" and ordered to the U. S. S. "Pinta."

GUTHRIE, J. A., assistant surgeon. Detached from the C. S. Str. "Blake" and ordered to the U. S. S. "Minnesota."

WARD, B. R., assistant surgeon. Detached from the U. S. S. "Vermont" and ordered to the U. S. C. S. Str. "Blake."

COOK, F. C., assistant surgeon. Detached from instruction at Naval Laboratory and ordered to the "Vermont."

RECENT DEATH.

CHARLES EDWARD BRIGGS, M.D., died in Boston, June 17th, aged sixty-two years. He was a member of the class of 1853 of Harvard College. In August, 1862, he was appointed assistant surgeon of the 24th Massachusetts Volunteers then serving at Newbern, N. C. In November, 1863, he was made surgeon of the 54th Massachusetts Volunteers. He served in the expedition to Charleston in July, 1864, and at Magnolia Cemetery, Savannah, Georgetown and Sumterville. He was mustered out of service in August, 1865. He was a member of the Massachusetts Medical Society from 1856 to 1859, when he moved out of the State.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Typhoid Fever. By Elmer Lee, A.M., M.D., Chicago. Reprint. 1891.

Eightieth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Hospital. 1893.

Conservatism in Accidental Surgery. By Edmund J. A. Rogers, M.D., Denver, Colo. Reprint. 1894.

Report of the Commissioner of Education for the Year 1890-91, Vol. I and II. Washington: Government Printing Office. 1894.

Analyses of Twelve Thousand Prescriptions. Compiled by W. Martindale, F.C.S., Joint Author of the Extra Pharmacopoeia. London: H. K. Lewis. 1894.

Extra-Uterine Pregnancy Simulated by a Small Tumor of the Ovary; Operation; Recovery. By William H. Morrison, M.D., of Philadelphia. Reprint. 1894.

Ueber den Werth methodischer Hörübungen für Taubstumme und für Fälle von nervöser Taubheit im Allgemeinen. Von Dr. Victor Urbantschitsch. Reprint.

Les Hernies inguinales de l'Enfance. Par le Dr. G. Félizet, chirurgien de l'hôpital Tenon (Enfants-Malades). Avec 73 figures dans le texte. Paris: G. Masson. 1894.

Treatment of Typhoid Fever. By D. D. Stewart, M.D., Lecturer on Clinical Medicine in the Jefferson Medical College of Philadelphia, etc. Detroit: George S. Davis. 1893.

Retinitis Albuminuria. History of the Drop-Bottle. Ophthalmia Neonatorum; Contraction of Eyelids; Glaucoma; Grattage for Granular Lids. By L. Webster Fox, M.D., Philadelphia, Pa. Reprints. 1894.

Ripening of Immature Cataracts by Direct Trituration. Subvulsion; a New Pterygium Operation. The Spectacle Treatment of Hypermetropia. By Boerne Bettman, M.D., Chicago. Reprint. 1893-94.

The Care and Feeding of Children, a Catechism for the Use of Mothers and Children's Nurses. By L. Emmett Holt, M.D., Professor of Diseases of Children in the New York Polyclinic, etc. New York: D. Appleton & Co. 1894.

An International System of Electro-Therapeutics for Students, General Practitioners and Specialists. By Horatio R. Bigelow, M.D., and thirty-eight Associate Editors. Thoroughly illustrated. Philadelphia: The F. A. Davis Co. 1894.

Fracture of the Skull; Trephining; Retro-Anterograde Amnesia; Recovery; Death One Month Subsequently from other Causes; Autopsy. By Edmund J. A. Rogers, M.D., and J. T. Eskridge, M.D., of Denver, Col. Reprint. 1894.

A System of Legal Medicine. By Allan McLane Hamilton, M.D., Consulting Physician to the Insane Asylums of New York City, etc., and Lawrence Godkin, Esq., of the New York Bar. Illustrated. Volume I. New York: E. B. Treat. 1894.

Diseases of the Skin; An Outline of the Principles and Practice of Dermatology. By Malcolm Morris, Surgeon to the Skin Department, St. Mary's Hospital, London, etc. With eight chromo-lithographs and seventeen wood cuts. Philadelphia: Lea Brothers & Co. 1894.

Materia Medica, Pharmacology and Therapeutics, Inorganic Substances. By Charles D. F. Phillips, M.D., LL.D., F.R.S. (Edin.), Late Lecturer on Materia Medica and Therapeutics at the Westminster Hospital Medical School, etc. Second edition. London: J. & A. Churchill. 1894.

A Clinical Manual, a Guide to the Practical Examination of the Excretions, Secretions and the Blood, for the Use of Physicians and Students. By Andrew McFarlane, A.B., M.D., Instructor in Neurology and Diseases of the Chest in the Albany Medical College, etc. New York: G. P. Putnam's Sons. 1894.

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